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Medicine and the Collateral Sciences.

SATURDAY, OCTOBER 4, 1834.

LECTURES
ON
DISEASES OF THE CHEST,

In the course of which the Application of

PERCUSSION AND AUSCULTATION

ARE FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture I.

The course of lectures, gentlemen, which I am about to deliver to you, naturally divides itself into two parts—first, diseases of the chest; and, secondly, diseases of the abdomen. I shall commence with the

DISEASES OF THE CHEST.

There are few subjects, connected with the study of medicine, of greater importance than the diseases of the chest; and they derive that importance from a variety of circumstances; some of which I shall detail.

In the first place, there are certainly no diseases of such frequency; for I may truly say that there scarcely exists the individual in this climate who has not, at one period or other of his life, been subject to some form of pulmonary disorder—nay, I may even say still more, there perhaps scarcely exists the individual in these latitudes who is not even *annually*, more or less, affected in this way.

Neither is there any class of affections which produces so great a positive mortality. I say *positive*, not *comparative;* because the diseases of the organs contained in the chest are not more fatal than those of the brain, or the abdominal viscera, but it results from their extreme frequency. It is true that the data which we possess, by which we judge of this, are insufficient, as medical statistics have been, unfortunately, too little cultivated in this country; but those which we do possess, err, I am quite satisfied, on the side of omission, rather than of exaggeration. From the London bills of mortality, we see that more than one-third of the annual mortality of this metropolis depends upon pulmonary disorder; and if we take into consideration the number of cases of dropsy, and the many cases of apoplexy, depending upon diseases of the heart, I am quite sure we should come nearer to the mark were we to say that one-half of the mortality depends upon affections of the pulmonary or cardiae systems.

In the next place, their complication with other diseases is a subject of great importance; for you scarcely find any general disease, especially of a febrile kind, in which the lungs and heart do not more or less participate. So sure as the skin becomes hot or cold, the mucous surfaces of the trachea and bronchi will sympathize with it. You will find no case of fever in which there are not some signs of pulmonary lesion. Chronic diseases occasioning great debility, often predispose to phthisis; and I need not say how the motions of the heart are accelerated in fevers, or are influenced by many other affections.

But to us, as medical men, there is another important reason why we should study these diseases. The signs by which we have hitherto judged of them, have been, as I shall shew you, extremely equivocal. I say *equivocal*, because one sign may be common to various conditions of the lungs and heart. In the middle of the last century a discovery was made, by Avenbrugger, by which these diseases could be more specially determined; and the means of doing so were enlarged by the still more brilliant discoveries of Laennec. He, or rather I may say they, have thus rendered the diagnosis of the diseases of the heart and lungs almost as clear, almost as distinct, as the external or surgical diseases of the body.

When you reflect, therefore, upon the

extreme frequency of pulmonary disorders,—of the mortality they occasion—of their complication with other diseases—and, finally, of the extreme importance of the new mode of investigating them—I need say no more to stimulate you to the highest exertion in prosecuting the study of this subject.

It might not be, perhaps, uninteresting at this moment, to cast a general view over the causes of this extreme frequency of thoracic disease. I do not mean to enter here into a minute detail, because I must do that when I arrive at each particular subject. In the first place, in the lungs you have a most delicate organization, consisting of an immense number of cells, extremely thin, so that from their mere texture it is not a matter of surprise that these organs should become frequently affected. But when you superadd that that texture is in constant movement—a movement which commences at the moment of birth, and only terminates in an existence of longer or shorter duration—a movement proceeding at the average rate of seventeen or eighteen respirations in a minute, and each of which, you will recollect, is not a single, but a double action, the one of inspiration, the other of expiration—so that you have no less than thirty-four or thirty-six movements going on in that time—I say, therefore, that the frequency of these motions in so delicate a texture, must strongly predispose these organs to disease. Consider, also, the nature of the functions which the lung has to perform; on the one hand, receiving blood, varying frequently in quantity—varying in the force with which it is received from the heart, and varying also, doubtless, in its quality; and on the other hand, receiving atmospheric air, varying also in quantity, quality, and, above all, in temperature;—taking all these circumstances together, you see the numerous causes there are to account for the frequency of diseases of the lungs.

The heart, again, is an organ delicate in its texture, considering the function it has to perform. It has constantly to overcome a resistance, because its office is to propel forward a fluid; this office commencing at the earliest period of embryotic existence, and terminating only in a life of varied duration. Too slow or too frequent a pulsation, may equally be a cause of derangement.

We see that the average rapidity of the heart's contractions is seventy or eighty in a minute, and that each ventricular beat is followed by a ventricular dilatation, which I think I can prove hereafter to be effected by an active expansion; so that the movements are in reality double the number of the arterial pulsations, or 140 or 160 in that time. We see also that these motions are influenced by a variety of circumstances, as general disease, labour, exercise, emotions of the mind, &c.: some of the passions accelerating the heart's actions to an extraordinary rapidity; others, as profound grief, depressing them almost to cessation. Considering all these circumstances, it is a matter of surprise that this organ is not more frequently affected.

It might be expected, perhaps, that I should enter here into an historical account of the rise and progress of our knowledge in pulmonary and cardiac diseases, or that I should give what is called *an historical lecture*. Were I to do so, I must suppose that all the gentlemen whom I have the honour to address are acquainted with the subject; I know that many of you are, but it is my business to suppose that I am addressing those who are perfectly ignorant of it; and were I to give a history, I must enter into details, and employ technical expressions, which I must assume you do not understand, and therefore I shall give as much of the literature as will be necessary to elucidate the subject, when I come to each particular part.

I shall now proceed to lay down the plan which I intend to follow in the course. I propose to treat of diseases of the lungs and diseases of the heart: the course, then, divides itself into two sections—first, diseases of the lungs, which will comprise about twenty lectures; and, secondly, diseases of the heart, which will occupy about six or seven.

We commence with

DISEASES OF THE LUNGS.

This portion of the course may be divided into two parts—first, the *Theory of the Signs* of pulmonary affections; secondly, the *Diseases* themselves—the latter section admitting the anatomical arrangement of diseases of the air passages, diseases of the parenchymatous substance, and diseases of the pleura.

THEORY OF THE SIGNS OF DISEASE OF THE LUNGS.

I shall now proceed to the consideration of the theory of the signs of the diseases of the lungs; and it may be asked, and very naturally, why I prefer commencing with this subject rather than with the diseases themselves. It is because there are many generalities which can be made in relation to these signs, particularly on the subjects of dyspnœa, percussion, and auscultation, easy to be understood at once, but which involve many principles and technical expressions

which would constantly embarrass us were we to defer their explanation until we arrived at their application to each particular disease. Experience has shewn this to me as the best plan, and I think you will soon discover this as we proceed.

Let us now endeavour to arrange the signs: I think the following order the best, as the lines of demarcation are tolerably distinct; and it applies as well to the rest of the diseases of the body as to those of the lungs.

First, *functional signs.* By a functional sign I mean a sign which arises from a disordered condition of the function of the organ.—Secondly, *local signs.* A local sign is that which is detected by a local examination of the organ.—Thirdly, *general signs.* By these we mean when two or more of the rest of the functions of the body are deranged in consequence of the disturbance of a particular organ. This arrangement, as I have just said, applies to all the diseases of the body; but as examples are infinitely better than mere definitions, I will give you a few to show what is meant.

A functional sign is a sign arising from the lesion of a function. For instance, I will suppose the eye to be inflamed. What is the first thing you observe? Why, that vision is impaired. There is a change here in the function of the organ, and that would be a functional sign. I examine the eye; I see, perhaps, redness of the tunica conjunctiva. This is a local examination of the organ; and the redness of the conjunctiva is a local sign. Suppose, in consequence of this disease, febrile symptoms arise; the pulse becomes excited, beating quickly; the head affected; and the skin heated. Here are several functions of the body disturbed in consequence of the derangement of a particular organ. These are the general signs. I will suppose a case of a common sore throat—cynanche tonsillaris. The first sign is a difficulty of swallowing—the function is disturbed, and that difficulty would be a functional sign. I examine the throat; I see the tonsil swollen and red. This swelling and redness are local signs. General febrile action would be set up under such circumstances, or the rest of the functions of the body would be disturbed in consequence of the lesion of the tonsils; and these constitute the general signs.—To exemplify it by a disease of the chest: suppose a case of peripneumonia, or inflammation of the substance of the lungs. The first thing I observe is a difficulty of breathing, *dyspnœa;* that is a functional sign. By percussion and the stethoscope I examine the chest, and I find certain sounds, and these would be local signs, and the general febrile action would be the general signs.

I shall not fatigue your attention with more examples, otherwise I might go through the whole of pathology, and give instances throughout of the general application of this simple division.

We will now commence with the theory of the signs of the diseases of the chest, by describing the

THEORY OF DYSPNŒA.

Dyspnœa is the first great functional sign of disease of the chest: to this I must request your especial attention.

By dyspnœa we mean an aberration from the normal condition of respiration, or, to use language less scientific, simply difficulty of breathing; but I would rather extend the term dyspnœa. It is generally used to express mere rapidity of breathing; but I would say that *any* aberration from the usual condition of respiration constituted dyspnœa: if the breathing were too slow, that would be to me dyspnœa, or difficulty of breathing.

Having given you this definition, I shall next attempt to establish a theory by announcing the following proposition, and then I shall endeavour to prove it; which is, that dyspnœa is nothing more or less than an effort of nature to establish an equilibrium between the quantity of the air and the quantity of blood in the lungs.

Before I proceed to establish this proposition, I must, in the first place, recal your attention to some of the leading points connected with the anatomy and physiology of the lungs and heart. The lungs are to be considered as a double organ, one placed upon each side of the chest, connected together by means of a tube called the *trachea,* which splits at its inferior extremity into two branches, denominated *bronchi,* one of which goes to each lung, and each has for its function the carrying of air into that organ. These bronchi ramify, and terminate in capillary extremities in the vesicles or air-cells of the lungs. Between the lungs is placed the heart: it is situated in the lower part of the cavity of the chest, and inclining obliquely to the left side. The heart is of a conical form, having its base uppermost, and its apex below. This viscus is divided into two parts, or a right and left side, by a central septum: it is also divided into two parts, according to its transverse diameter, the upper and lower; the upper portion being called the *auricles,* the lower part the *ventricles;* and the terms right and left being applied to these cavities according to their relation to the perpendicular septum.

Now, what is the use of this organ?—The heart may be considered as a vessel divided into four parts or cavities, for the purpose of receiving the blood from all parts of the body, and for propelling that blood onwards. Let us trace the blood in its course.

The arterial blood, of a vermilion red colour, and fitted for the purposes of secretion and nutrition, is carried from the lungs by the four pulmonary veins into the left auricle, and thence into the corresponding ventricle, from which it passes into the aorta, and all its branches to their capillary terminations; and, by the beautiful mechanical arrangement of the mitral and semi-lunar aortic valves, it is prevented from retrograding in its course in the heart. The arterial blood deposits its secretions, and adds nutriment to the living fibre at the extremity of the aortic system of vessels, and is now diminished in quantity in proportion to those deposits, and changed in other qualities; it becomes of a darker red hue, and is called venous; is unfitted for the purposes of secretion (excepting of the bile), and of nutrition, and requires renovation.

This renovation is effected in its transit back again to the heart, by the chyle and lymph being poured into the venous system, and by the blood being carried afterwards into the lungs, to be there exposed to the oxygen of the atmospheric air: by the united influence of these causes it is restored to its arterial qualities, and is again fitted for its important functions. But how is it carried to the lungs?

From the arterial capillaries arises another system of vessels equally minute, which unite in larger and larger tubes as they approach the heart, until they finally terminate in the right auricle by two large vessels, which are denominated venæ cavæ. These vessels are called veins; the blood within them flows more tardily than in the arteries; and as if the force which moved the venous blood were insufficient to carry it to the lungs and round the pulmonary circulation, the right side of the heart seems placed intermediately to receive it, and to give it sufficient impetus to be transmitted to its ultimate destination.

The blood, then, of the cavæ is carried into the right auricle, ventricle, and pulmonary artery, to the minutest ramification of the latter vessel, and from thence to the system of pulmonary veins. A similar arrangement of valves exists in the right side as well as the left, under the names of tricuspid and pulmonary semi-lunar valves, and for a precisely similar purpose, to prevent the retrogression of the blood.

You thus see here one pulmonary artery to carry the blood into the lungs, and one tube or trachea to carry air; but the venous blood, when changed, passes by a different set of vessels, the pulmonary veins, while the air returns by the same vessel, necessitating a double act in the latter,—the one of inspiration, the other of expiration.

Now, to examine the subject still farther, we must inquire, What are the elements essentially necessary to the healthy condition of the circulation and respiration? There are two; there is the blood on the one hand, and the air on the other; there is blood to be changed, and there is air to be carried down to change it.

With regard to the blood, every time that the right ventricle propels it into the lung it must be effected in due *quantity*. I cannot state the quantity, for it must be various in different individuals, and at different ages; but there must be a due quantity in relation to the quantity of air; and therefore we will note down as our first element, *quantity*. In the next place, the blood must certainly be conveyed with due *force*. If the force be too feeble, it is very evident that it will not propel the blood sufficiently onwards; if it be too strong, the contrary will be the effect, and therefore *force* must essentially be an element here. In the third place, there must certainly be a given *time* for each pulsation. The heart may beat thirty or forty times in a minute,—that is too slow; or it may beat 150 times in a minute,—that is too quick; and therefore *frequency of pulsation must be considered as an element*. In the next place,—although this is a subject which we do not yet well understand,—there can be no doubt the blood should be of a certain *quality*. And, finally, there must be a *vessel of due calibre* to convey the blood. *Capacity* of vessel may therefore be considered a necessary element.

These, then, are the necessary elements of the healthy circulation of the blood,—due quantity, a given force, a due relation of time, a given quality, and a proper capacity of the vessels.

Then, with regard to the air, you will find the elements here exactly the same as in the case of the blood. There must be a due *quantity* of air to decarbonize a due quantity of blood. *Quantity*, then, will be an element.

We may give an instance of this. In breathing upon a plain, we will say at the level of the sea, where the atmosphere is of the greatest density, from receiving the greatest possible pressure, we will suppose that a cubic inch of air contains a given quantity of oxygen: but ascend a mountain, the pressure of the atmosphere be-

comes less, and consequently there is less oxygen in the same space; the breathing then becomes quick; and therefore it is evident that quantity forms an element. Then the respiratory acts must be effected with a certain *force,* otherwise the lung would receive too great or too small a quantity of air. There must also be a given *time.* The ordinary time is about eighteen respirations in a minute; but, suppose there be only one-half that number, the patient will experience great difficulty. Try it yourselves. Reduce the respiration voluntarily to four or five times in a minute, and you will soon feel great distress; from which it is evident that time is an essential element. The *quality* of the air, no doubt, is another element. I am not speaking of poisonous gases, such as sulphuretted hydrogen, but of those which are noxious only from the absence of oxygen, such as carbonic acid and azote. Finally, there must be a due *capacity* of the trachea and the lungs, to admit of sufficient air to oxygenize the quantity of blood sent by the pulmonary artery.

Now let this be understood, and what we are about to say becomes exceedingly easy of comprehension. There must always be a due relation of these elements to each other; for if there be not, you will have dyspnœa as the result. If the quantity of blood in the lungs be increased, there will be an attempt to increase the quantity of air; and that can only be effected by accelerating the respiratory acts; and therefore I repeat, that dyspnœa is an effort of nature to establish an equilibrium between the quantity of air and the quantity of blood. But I will state a number of examples which will incontestibly prove the truth of my proposition. They shall first be in relation to the heart, and next to the lungs.

You know that if a person runs, he soon gets out of breath, or into a state of dyspnœa. What is the cause of this? The venous blood is now precipitated with greater rapidity to the right side of the heart, and from thence to the pulmonary artery and lungs, so that the force and velocity of the circulation is increased; by consequence the quantity of blood in the lungs is also increased in a given time, so that we have here the elements of force, velocity, and consequent quantity, in excess. What results? The respiratory acts become also accelerated; they are effected with greater force and rapidity, and more air is received into the lungs, in a shorter time. Nature here, then, endeavours to create a due relation between the force and velocity of the movements of the two organs, for the purpose of establishing an equilibrium between the quantity of the blood and the quantity of the air.

Let us now suppose a case of diseased heart (referring to a diagram)—that the calibre of the aortic orifice be diminished, either by congenital error of formation, or by diseased valves. The blood arrives in due quantity to the left ventricle, but the aorta, or discharging tube, is of too small a *capacity* to allow it to freely pass; what takes place? The blood must accumulate in a direction posterior to the obstruction, and retrograde to the current of the circulation. Thus, then, the left ventricle and auricle become habitually too full, and finally, as we shall hereafter describe, diseased in their parietes; the pulmonary veins to their capillary extremities become also gorged with blood, thus opposing obstruction to the current flowing in the pulmonary artery and the right side of the heart. The result of all this is, that the blood exists in the lungs always in too great *quantity,*—the original cause being the obstruction from the diminished calibre of the aortic orifice. Observe persons affected in this way; they are in a state of habitual dyspnœa; their respiration is constantly accelerated; they are always endeavouring to increase the quantity of air, to establish a relation with the quantity of the blood. Increase the force and velocity of their circulation, by making them ascend an inclined surface, although but a small additional quantity of blood be sent to their lungs, yet their breathing becomes quickened to a sense of suffocation. They are obliged to stop; nature here makes a great effort to restore the balance.

We will now proceed to the lungs, to exemplify the same principles; and we will suppose that the circulation is perfectly healthy. You know that one of the most formidable diseases we have to treat, though fortunately not a very frequent one, is inflammation of the rima glottidis, or opening of the larynx. The rima glottidis is but a narrow orifice; but the result of inflammation there is to contract it very considerably, and the *capacity* of the air tube is diminished at its very commencement, and consequently the diameter of the column of air inspired; so that the quantity of air is insufficient for the purposes of respiration at the usual rapidity of seventeen or eighteen movements in a minute. Dyspnœa arises; the respirations increase to thirty, forty, or fifty, in the same time. We endeavour here to establish an equilibrium in quantity, by multiplying the inspirations in proportion to the narrowness of the column of air. Is not this, then, an effort of nature to establish an equilibrium between the quantity of air and of blood in the lungs?

Croup is an inflammation of the tracheal mucous membrane, having for its result a

secretion which concretes, and forms an inner mould for the larynx and trachea, or a tube within a tube. The column of air must here be diminished in diameter, and is insufficient for the purposes of respiration. It is renewed then with a doubled or tripled velocity—in other words there is dyspnœa, and for the same reasons I have already mentioned.

I will suppose a case of peripneumonia arrived at the second stage, or hepatization, and that it affects half the lung on one side, the *capacity* of the whole of the lungs would be diminished one-quarter; or if it affect the whole of the lung on one side, then the diminution of capacity would be one-half. Under such circumstances, the rapidity and force of the respirations would be proportionately increased; so that here the elements rapidity and force are in excess, in consequence of diminished *capacity*.

Any circumstance preventing the free expansion of the lungs, may be said to act by diminishing their capacity; thus fluid in the cavities of the pleura, or in the pericardium, aneurisms of the thoracic aorta, enlargements of the heart, tumors in the chest, all prevent these organs from expanding, more particularly in the transverse, or antero-posterior directions; whilst abdominal tumors, gestation, dropsies, &c. prevent the free descent of the diaphragm, and consequently the increase of the perpendicular diameter of the thoracic cavity.

I need hardly say, that the *quality* of the air influences the respiration. Confine an animal in a vessel in which the air cannot be renewed; and in proportion to the diminution of the oxygen dyspnœa comes on—that is, it increases the frequency and force of its respirations in proportion to the decrease of that gas.

I might, at the expense of fatiguing your attention, easily increase the number of examples, but I hope these are sufficient to prove the proposition I originally advanced, that dyspnœa is an effort of nature to establish an equilibrium between the quantity of the air and of the blood in the lungs.

Are there any exceptions to this theory? There are apparently two; but I think they are only *apparent*, and not real. In some instances, particularly in low fevers, you will find that the pulse is very rapid, but that it is small, and there will be no dyspnœa. You have two elements here, rapidity and quantity, in fault; but if you have the quantity diminished at each stroke of the heart, as the smallness of the pulse would indicate, the increased rapidity may make up for the difference of the quantity which should be sent into the lungs each time; and therefore there is a compensation, and the real quantity is not greater than it should be, and consequently there is no necessity for a greater quantity of air than usual, and there is no dyspnœa.

The next objection would be, that in some cases the pulse is full and quick, and yet there is no dyspnœa: you see this particularly in cases of inflammatory fevers; but observe the blood as it flows from a vein; it appears half-arterialized; it is much redder than usual, especially if the febrile action be high. What has occurred in this case? the blood seems to be already, to a certain extent, decarbonized. The quality is changed; it does not require so much oxygenation. I only offer this as an hypothesis; but I believe that in consequence of the high degree of the oxygenation of the venous blood, it requires less decarbonization when it arrives at the lungs, and therefore the respiration is not increased in frequency.

What is the value of the sign of dyspnœa? In one sense it has no value; in another it is of the highest importance. Dyspnœa will never determine what is the nature of the lesion; it will not determine whether the lungs be affected, or the heart, for you see it is common to them both; it is common to every disease of the lungs, and to a certain extent to every disease of the heart; and therefore it is an *equivocal* sign;—nay, it even occurs in diseases that are placed out of the cavity of the chest—in dropsy, and even in pregnancy, and therefore I say it is of no value in determining a specific lesion. But it is of the highest importance in a practical point of view, in determining the degree of the loss of equilibrium, and therefore gives the most valuable indications. Such, then, is the general theory, as I apprehend, of the sign dyspnœa.

CASE OF

ILIAC ANEURISM, AND LIGATURE OF THE AORTA.

By John Murray, M.D.
Cape of Good Hope.

[Communicated by Sir James Macgrigor, Bart.]

On the 22d January last, Joseph Banana, æt. 33, a Portuguese of spare habit, naturally of an excellent constitution, and a sailor by profession, was admitted into the Civil Hospital with a very large firm tumor occupying the right iliac, hypogastric, and inguinal regions. He stated that he thought it must have commenced about eight

months previously, when, after much hard labour and constant exposure to cold and wet in seal and whale fishing, he was attacked with violent pains in the right thigh and leg, which he considered to be rheumatic. These, however, did not prevent him from continuing at work; and he was not aware of the existence of any tumor till some months afterwards, that (in the beginning of October last) he was obliged to walk twenty-two miles, and imprudently bathed himself in a river while in a state of profuse perspiration, after which his right thigh and leg became very stiff and painful, and he discovered a small tumor in his groin, about the size of a walnut. Still, however, he was able to go about and to work, although with pain and difficulty, till about a fortnight before entering the hospital, when the tumor began to enlarge suddenly and rapidly, with a strong pulsation, which was perceptible outside his clothes, and accompanied with such acute pain in the limb, groin, and loins, that he was no longer able to walk; at the same time his bowels became obstinately costive, and he had a constant desire to micturate.

The tumor now presents the greatest size and prominence immediately above Poupart's ligament, in the site of the external iliac artery. The most prominent part is tense, shining, and circumscribed; about the size of an orange, and its hard irregular base extends upwards to an imaginary line drawn from the umbilicus to the lower ribs, and downwards to a couple of inches below Poupart's ligament; its lateral boundaries being formed by the ilium and linea alba. Pulsation is felt in the prominent part of the tumor, and a sort of whizzing sound is indistinctly discovered in it on the application of the ear or stethoscope; but there appears to be no circulation in the femoral artery. He does not complain of much pain in the tumor at present, but says it is often excruciatingly severe along the thigh bone, and in the knee. The limb is much swollen, and he keeps it constantly in the bent position, and cannot bear to have it extended. The skin is nearly insensible to the touch, and even to pinching, particularly on the inner part of the thigh; yet he describes having a feeling as if worms and flies were creeping over it. Temperature of the diseased limb 92 degrees, and of the sound one 97. Pulse 96, and intermittent; and the action of the heart has a corresponding irregularity. Two or three days ago he had an attack of epistaxis. Tongue covered; respiration natural; intellect clear. Has had scarcely any sleep for many nights, and no motion in his bowels for eleven days.

Ordered two Compound Colocynth Pills; with a spirituous lotion to the tumor.

January 24th.—His bowels have acted from the pills, and he had some refreshing sleep in the night. The leg has become more œdematous, and the veins are greatly congested, from the tumor impeding the return of whatever blood goes to the limb. There is now no pulsation in the tumor visible to the eye; but on applying the ear closely, a deep throbbing is perceptible in it, accompanied with a sound as of a fluid gushing past an obstacle. At a consultation called by Mr. Bailey, the surgeon of the hospital (present, Surgeons Bailey and Abererombie, Dr. Stewart, and myself), the disease was pronounced to be aneurism of the external iliac artery; and it was the opinion that the case was a very desperate one. The tumor evidently extends too high up the abdomen to admit of the common iliac being tied from the right side. An operation on the distal side of the aneurism holds out no prospect of benefit, as the circulation in the crural artery seems to have already ceased; and ligature of the aorta is suggested as affording the only gleam of hope for the patient.

Ordered to be bled to ℥xij.; a bandage wetted with spirituous lotion to be applied round the limb, from the toes upwards; and an enema to be administered in the evening.

25th, 8 A.M.—(Another consultation.) He passed a tolerably quiet night, and had some sleep; and he is considered a little better this morning. The swelling of the limb has diminished since the bandage was applied, and the tumor appears flatter. Pulse 94, and more regular; and the action of the heart has also become regular. Countenance more cheerful; the bowels were opened by the enema; his appetite has improved, but he has much thirst. I thought I could distinguish a slight pulsatory thrill in the femoral artery.

He was ordered the following draught every fourth hour:—

℞ Liq. Ammon. Acet. 3vj.; Spt. Æther. Nit., Tinct. Digitalis aa. guttæ x.; Syrup, 3j.; Aqua, ℥j. M.

26th, 8 A.M.—(Consultation.) At ten o'clock last night he was seized with such agonizing pain in the back and loins, that, although a man naturally possessed of great fortitude, he groaned and roared incessantly for two or three hours, calling out for something to afford him relief. Forty drops of laudanum were administered, and the pain abated at 3 A.M., after which he slept a little at intervals; but he is greatly changed for the worse since yesterday. His features are much more shrunk and exsanguine; the limb has become quite cold and insensible; and the tumor is again enlarging, and assuming a dark bluish appearance at its prominent part. Pulse 128, and small.

The opinion is, that if an operation for tying the aorta is to be performed, there is little or no time for longer delay; it is considered necessary, however, that some natural warmth (as indicating the existence of some circulation) should be restored to the limb before the operation ought to be attempted.

The wet bandage was removed; stimulating liniments, with friction by warm flannels, were ordered for the limb; and sp. ammon. comp. in small doses, with mist. camph. internally.—The draught prescribed yesterday to be omitted.

At noon the consultation met again, when it was found that by perseverance in the application of friction and warmth to the limb, it had regained a natural degree of temperature; but this was attended with such great pain to the patient that he expressed himself annoyed at the continuance of the exertions "to keep him in pain;" still, however, his greatest agony was in the thigh bone and knee. There is no pulsation to be felt in the femoral artery, and the integuments of the foot have a bluish colour.

The expediency of tying the aorta was now most seriously discussed. The death of the patient was evidently fast approaching if that operation should not be performed, and yet it was considered a fearful alternative for him.

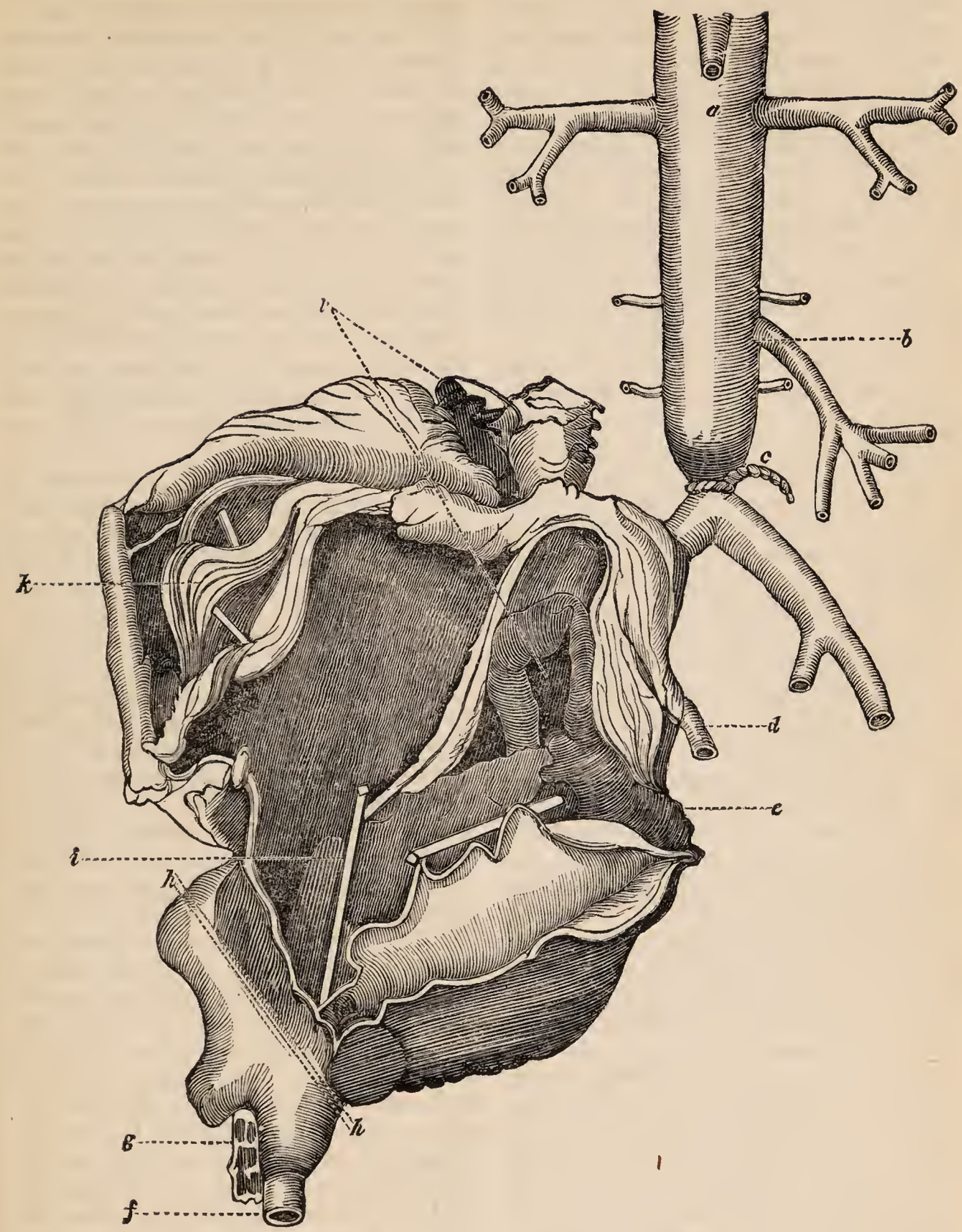
Mr. Bailey thought it an operation that no surgeon was warranted in performing, as the only two instances of it recorded had proved unsuccessful; and he believed the chances in favour of its ever succeeding to be so slight, that even should the majority of those present decide upon recommending it, he would operate against his own judgment, and with a feeling that he was not sufficiently authorized to do it.

Mr. Abercrombie likewise thought the operation held out scarcely any prospect of saving the patient's life, and that it would prove unavailing.

Dr. Stewart expressed his opinion, that as the man, in all probability, would die in less than twenty-four hours if his aorta was not tied, he thought the operation justifiable, as it certainly held out some ray of hope to the man, and the only one of prolonging his life.

I agreed with the Doctor, and advised the operation, on the following considerations:—

That from our present knowledge it could not be deemed altogether beyond the resources of the human frame to re-establish circulation in the lower extremities after tying the aorta. That the only two cases of it recorded, viz. by Sir A. Cooper and Mr. James, did not decide positively that the operation was altogether hopeless, and that it could be performed differently, and in a manner more likely to succeed, by not cutting into the cavity of the abdomen. That this was a fair case for putting its chance of succeeding to trial, and might go far to decide the point. That it could scarcely ever be deemed necessary under circumstances more favourable than in the present case, as the patient seemed sufficiently strong to bear it, his constitution being naturally a good one, and not having suffered very seriously from the local disease until within the last few days. He had not been exhausted by hæmorrhage; he had a resolute and cheerful mind, and he was not unwilling to submit to any operation that was likely to afford him relief from agony, and, at the same time, that held out any prospect of saving his life, which he was now quite aware to be in imminent danger. I said, however, that I could not think of urging my advice, as Mr. Bailey did not feel in his conscience that he was warranted to per-



EXPLANATION OF THE ENGRAVING.

a—Aorta.
b—Inferior mesenterie artery.
c—Ligature on the aorta.
d—Right internal iliae.
e—Probe introduced into the upper end of the external iliac.
f—Femoral artery.
g—Crural nerve.
h, h—Imaginary line in the direction of Poupart's ligament.
i—Probe introdueed into the lower end of the external iliac.
k—Layers of the sac held open by quills.
l—Between these lines gangrene had commenced.

form the operation. Mr. Bailey replied, that for the reasons he had before stated, he confessed he would rather not perform the operation, as he could not reconcile his conscience to it; but said, that if I chose to undertake it, he was willing to assist me. I begged for a short time to consider, when, having made up my mind, I agreed to perform it in the afternoon; but the absence of Mr. Bailey, who had been called away, and detained in attendance with a serious case, occasioned its being delayed till eleven o'clock at night.

The patient, in the interim, continued in much distress, and was gradually getting worse; the limb was cold, although warm applications were continued to it, and the integuments of the instep and back part of the leg were getting discoloured; the pains in the loins, thigh bone, and knee, were undiminished; his countenance was becoming more anxious, his pulse more feeble and frequent (120), and he was very restless. An enema was administered, which brought away a scybalous motion; he drank a cupful of coffee with relish; his bladder was emptied by a catheter, and he had fifty drops of laudanum given him before the

Operation—which was performed by candlelight, and as he lay in bed, that he might not be put to the pain of being moved before and after it.

The size and position of the tumor precluding the possibility of reaching the aorta by cutting from the right side of the abdomen, rendered this necessary to be done from the left, which fortunately, at the same time, had the advantage of affording the readiest and easiest access to the vessel, on account of its anatomical situation, but greatly increased the difficulty of reaching the right common iliac, to tie it, which it was hoped might be found possible.

The patient lying inclined to the right side, the first incision was commenced a little in front of the projecting end of the tenth rib, and carried for more than six inches downwards, in a curvilinear direction, to a point an inch in front of the superior, anterior, spinous process of the ilium, its convexity being towards the spine. The skin, the subcutaneous cellular tissue, and the aponeurosis of the external oblique muscle, were first incised; next the fibres of this muscle; and successively afterwards the layers of the internal oblique and transversalis muscles were displayed and divided; which was found rather a delicate part of the operation, as their fibres contracted spasmodically when touched by the scalpel. The fascia transversalis was now brought beautifully into view, and cautiously divided by a pair of scissors upon a director, to avoid wounding the peritoneum. This membrane being now completely laid bare to nearly the whole extent of the external wounds, was next detached from the fascia covering the iliacus, internus, and psoæ muscles, chiefly by the hand, introduced flat between these parts, to separate the loose cellular substance connecting them, which was easily effected.

Whilst detaching the peritoneum in the fossa of the psoæ, I found my fingers get into a soft pulpy mass, and a good deal of dark bloody fluid began to ooze out by the side of my hand, which made me withdraw it and examine the parts, by throwing a ray of candlelight into the bottom of the wound, when, from the dark appearance of the parts, my first impression was that they were in a gangrenous state; but I soon discovered that it was caused by ecchymosis, or effusion of bloody serum into the loose cellular texture. I then re-introduced my hand, and gradually prosecuted the detaching of the peritoneum in the direction of the spine, till I came to a large pulsating vessel, which I found to be the upper part of the left common iliac, and in another minute the aorta itself was under my finger; to satisfy myself of which, I requested one of the gentlemen assisting me to place his ear on the tumor, and his hand on the left femoral artery, when he heard and felt the pulsation to stop, and recommence in each, as I compressed the vessel, or the contrary. I now endeavoured to reach the right common iliac, but found that the walls of the tumor extended nearly close up to the bifurcation of the aorta; and even had this obstacle not existed, I do not think there is scope for the hand to perform the necessary manipulations to place a ligature upon that vessel from the left side, without using a degree of force, and causing a laceration of parts, that would be inconsistent with due professional caution, humanity, and judgment.

A tedious and rather difficult part of the operation succeeded; viz. the mak-

ing a division in the aortic plexus of nerves, and in the membranous sheath covering the aorta, to get betwixt the vessel and the spine, which I effected partly by the steel end of an elevator cranii, but chiefly by my nails, *with my mind at my fingers' ends;* and I was not a little rejoiced when I had got a sufficient separation to be able to insert the point of the aneurismal needle beyond and behind it; after which I was soon able to get it, with the ligature, round the vessel, without including any portion of nerve or other extraneous substance. In this manœuvre it was with difficulty that the longest-handled aneurismal needle could be made to reach the necessary depth. The ends of the ligatures being brought out, the aorta was gently raised upon it, which enabled us, by holding up the peritoneal bag, to see this great vessel pulsating at an awful rate.

The noose of the ligature was then gradually tightened, till all pulsation and circulation was found to have decidedly ceased in the left groin; and we anxiously watched the general effect upon the patient whilst this and the second knot were being tied.

The pulse at the wrist, during the time, underwent no sensible alteration either in strength, fulness, or frequency; nor did the vascular organization of the head seem to be abnormally congested or excited by the sudden check to this great stream of the circulation. The tightening of the knot did not seem to occasion him any great pain, nor to cause any unusual sensation or shock in the vascular, nervous, or respiratory systems. His first complaint was, that his left leg had become as benumbed and useless as his right, and that we had done him bad service in laming his good leg, which he did not expect, and lamented it bitterly; and on feeling the aorta, it was found to be full, and pulsating, with very great strength, above the ligature, but empty and motionless below it. The ends of the ligature were now brought out exteriorly, and the lips of the wound drawn together by three sutures and adhesive straps, over which a compress and bandage were applied.

The operation was more tedious than difficult; and being effected chiefly out of sight by the hand, it had not the terrific appearance which that by the method of cutting into the cavity of the abdomen must have, and it was accomplished with the loss of less than two ounces of blood. At one time, during its performance, he required to get some brandy and water to support him; but when it was over, he seemed quite as well as before its commencement; and the pulse was 128, steady and regular.

In about a quarter of an hour after the operation he felt faint, and the pulse fluttered for a few seconds; but he speedily recovered after drinking a little wine and water. He was now placed in a comfortable position in bed, by putting a pillow under his hams, and raising his shoulders to relax the abdominal muscles; and in doing this we were much surprised, as well as pleased, to find that he had the power of moving both his lower extremities with considerable force.

Pulse, about an hour after the operation, 116, regular and firm. Twelve Guttæ Nigræ were administered to him in ℥ss. of camphor mixture.

From the time that the ligature was tied, besides complaining of deadness of the left thigh and leg, he very soon began to express having a painful sensation of distention of the bladder, which gradually increased. A catheter was introduced, by which an ounce of urine was drawn off, and the bladder quite emptied, but without relieving the sensation. A flexible tube was also put up by the anus, beyond the sigmoid flexure, under the impression that there might be flatus in the intestines, and an enema was administered; but still for more than an hour his incessant cry was, "My bladder will burst: why do you not pump my water off?"

January 27th.—About 2, 30. A.M. he became easier, and called for a cigar, which he smoked for five minutes, and said, "All I now want is a bottle of wine by my bed-side." A little more wine and water was given him, when he was left quiet.

6. 30. A.M.—From 3 o'clock he was tranquil, and slept at intervals, till this time. He now complains of severe pain in the lower extremities, and over the pubic region. His countenance is anxious, but less so than yesterday. Pulse 120, equal and firm. Temperature of the right ham, $89\frac{1}{2}°$; left, $88\frac{1}{2}°$, (lower than that of the right;) axilla, 98°. Tongue dry, and of a dark-brown colour. The aneurismal tumor is softer and flatter than before the operation.

There is very little swelling or tension of the abdomen. He has taken a cup of tea and toast with relish, and it is thought that there is reason to entertain some degree of hope that the operation may succeed, as he is easier, and certainly appears to be in some respects better, than he was before it.

Ordered Pulv. Scammon. Comp. ℈i. Haust. Seidlitz.

2, 30, P.M.—Mr. Bailey reports, that he administered an enema at 10 o'clock, as our patient's bowels continued very uneasy, and the purgative had not operated: that about 11 o'clock he began to complain of violent headache, with great beating of the carotid and temporal arteries, at the same time that his pulse was scarcely perceptible at the wrist; that there was then also much jactitation of the arms, and rolling of the head, and that his face became covered with a cold clammy sweat.

Brandy, ammonia, and camphor mixture, were ordered to be given at intervals in small quantities, as symptoms indicated; since which he has rallied, apparently from the effect of the stimuli. The respiration is hurried, but the pulse at the wrist has improved, and the action of the heart is strong. Both his legs are quite numbed and senseless; spasmodic twitchings are observed in the muscular fibres of the left thigh; and the livid discoloration in the integuments of the back part of the right limb has increased. He has just taken some soup.

5 P.M.—He has slept a little, and seems refreshed by it; and has taken some more soup, and a glass of champaigne. No natural warmth is returning to the lower limbs; they continue *death-cold*, notwithstanding the most careful and constant application of external heat, &c.

9 P.M.—He is sinking fast. Facc hippocratic; radial pulse scarcely perceptible, but the heart's action still strong. The spasmodic twitchings in the muscles of the left thigh continue. Respiration very hurried and anxious. He is now passing an involuntary stool.

At 9, 50 P.M. he died, having survived the operation scarcely twenty-three hours.

Dissection.—The lower part of the body having been previously injected from the thoracic aorta with great care, was examined ten hours after death.

The abdominal cavity being opened, it was found that the peritoneum had not been injured in the operation; and it exhibited no marks of inflammation.

The omentum, stomach, intestines, and mesentery, were minutely injected, and sound in their structure.

The bladder was vesicated on its internal surface, and its coats considerably thickened.

The peritoneum and abdominal muscles, where they covered the tumor, were densely united together by its pressure, and quite thin and shining at its most prominent part.

On making an incision through the peritoneum, in the line of the operation, the left ureter was observed to be dilated to the size of the little-finger, yet it appeared to have been uninjured in the operation, having been raised along with the peritoneum.

The aorta was found tied at three or four lines above its bifurcation, and about an inch below the inferior mesenteric artery, opposite to the intervertebral substance between the fourth and fifth lumbar vertebræ. The aortic plexus of nerves had been accurately divided, and the vessel completely separated from the surrounding parts. The ligature was well placed, and included no extraneous substance, excepting two small bits of detached nervous fibre that had probably been torn from the aortic plexus.

The aorta was distended with the wax injection, to within about one-third of an inch of the ligature; a clot of blood intervened between them; and beyond the ligature neither size nor wax had passed, and no particle of either was discernible in any of the iliac, crural, or femoral arteries, nor in any of their branches.

A few drops of the size injection were found in a small anastomosing vessel discovered passing between the inferior mesenteric artery and left internal iliac: it arose about 2½ inches below the origin of the mesenteric artery (from the hæmorrhoidal branch of it, which seemed larger than usual), and joined one of the upper branches of the internal iliac, being in length about two inches, but its calibre was so small, having only admitted two or three drops of the coloured size, that it probably never carried red blood during life. No corresponding vessel was to be found in the right side, nor could any further

anastomoses be discovered between the arteries of the abdominal aorta and those of the pelvis, or lower extremities. To what degree it may have existed between the latter and the arteries of the thoracic aorta, we had not an opportunity of ascertaining, as the body was not prepared for it.

The tumor itself, when exposed to its full extent, was found to reach from an inch and a half below Poupart's ligament to within an inch of the bifurcation of the aorta, overlapping the left common iliac artery, occupying the whole of the iliac fossa of that side, and pressing the kidney nearly double. Being incised, it exposed to our view an immense aneurismal sac, filled with concentric layers of coagulable lymph deposited on its surface, loose coagula of dark blood, and thin brown sanies.

From the general condition of the parts connected with the tumor, it appeared as if the disease had been of long standing. The iliacus and psoæ muscles were in a state nearly approaching to putridity, and the aneurismal sac itself had been on the point of giving way at two different places—viz. at its upper part (behind the peritoneum) by sloughing, as gangrene had advanced to such a degree that its substance gave way with the slightest touch of the finger; and at its lower and anterior part it was nearly bursting into the cavity of the abdomen, from the extreme distention and attenuation of its parietes, where it was most prominent.

By simple inspection of the inner surface of the aneurismal sac, we could not discover its communication with the artery. A probe was attempted to be introduced into it from the femoral artery, but the crural was found to be so much contracted as not to admit of its passing. By blowing into the femoral, however, with a blow-pipe, an opening was discovered at about half an inch above Poupart's ligament; but as from this upwards there was no continuation of the external iliac, the place of communication with the upper part of the artery was only ascertained by passing the end of the blow-pipe around, and blowing at the same time gently through it, till we found a part from whence the common iliac became inflated, which was more than three inches above the lower opening. In the intervening space between them, no trace of the tube of the external iliac was discernible.

Around the upper aperture several small spiculæ of osseous matter were discovered.

At first it appeared as if nearly the whole of the external iliac was disorganized and involved in the aneurism; but after careful dissection, about two inches of its tube were disentangled from the condensed cellular substance forming the outer layers of the sac, in a sound state; after which, it became confounded with the walls of the aneurism.

The whole of the lower part of this artery, together with the crural, and nearly an inch of the femoral, were in a diseased state, and implicated in the tumor.

The most material parts have been very neatly preserved, by Mr. Bickersteth, the assistant-surgeon of the hospital; and Mr. Bailey has kindly allowed the preparation to be sent to the museum of the army medical department, at Chatham.

I am indebted to Mr. Bickersteth also for the accompanying drawing of the preparation.

Remarks.—As our knowledge of the human body has advanced, we have been led to place greater confidence in the powers of the animal economy for re-establishing the circulation of the blood by collateral channels, in the event of its natural course becoming obstructed; and surgeons, emboldened by the success which has attended their operations on the different branches of the aorta, and encouraged also by discoveries in morbid anatomy, and by the result of experiments upon inferior animals, have considered that it might not be incompatible with life and recovery to tie this vessel itself.

Thousands of minute vessels carry on a degree of circulation by innumerable anastomoses, independent of the aorta, which are capable of enlarging, to perform the duty of the respective trunks when they become obliterated; and the efforts found to have been made in some instances by nature to accomplish this are truly wonderful. The canal of the aorta has been found obliterated by disease even at its arch, as well as in different other parts of its course, and still sufficient circulation had been carried onwards to the inferior parts of the body, and life preserved. It is true that in such instances nature may have had a long time to prepare the anastomosing vessels for the change, and that the process of collateral circulation was proba-

bly effected in a gradual manner, by a simultaneous and proportionate enlargement of these vessels, or by the formation of new and special ones, as the obstruction in the diseased trunks increased; but this is not the case when we tie an artery for a wound, and it is still rather a desideratum in surgery to ascertain in how short a period of time, and in what exact way, nature prepares these circuitous channels under different circumstances. Much no doubt will depend upon the state of the patient's constitution and period of life, as it is not by the mere impetus of the circulation that the anastomosing vessels become enlarged, or that new channels are formed; but by a process which is as much one of vitality as the growth of the body itself. But I should say that in general collateral circulation is readily established, and in a few hours, after our operation upon very large arteries.

Before Sir Astley Cooper's operation, however, which has been much condemned by some of the profession, I apprehend no one thought that a man could live for any time after the aorta had been tied: it was a bold, but certainly not a rash undertaking, under the circumstances of the case; and it afforded important information; as his patient survived it *forty hours;* and from the heat and sensibility of the sound limb becoming gradually restored, and keeping up to the last, after the operation, there is reason to believe that collateral circulation was re-established in it, although in the diseased limb this process evidently failed, as there was no return of animal heat or sensibility in it, which Sir Astley attributed to the condition of the aneurism preventing the free course of the circulation.

It was with the view of ascertaining exactly what degree of collateral circulation had taken place in my case, that I had the body injected, and from not finding but one solitary minute vessel of communication between the arteries of the abdominal aorta, and those situated below the ligature, as stated in the account of the dissection, my first impression was, that the operation had failed from want of accommodating power or ability in the system to provide against the effects of the sudden obstruction to the main current of the blood; and I was disposed to conclude that the operation never could succeed, even if the patient had no disease besides to contend with; but on a more extended examination and consideration of my case, and all circumstances connected with the subject, I do not feel justified in recording my opinion of it to be so very unfavourable.

As we proceeded in the examination of the body of poor Banana, we had ample reasons for believing that his death was neither occasioned by the injury inflicted upon his general system by the operation, nor by the tying of his aorta, but solely by the effect of his disease; as it appeared that gangrene had commenced in the upper part of the aneurismal sac, and must have existed several days prior to the operation, which accounted for the rapid progress of the constitutional symptoms after his admission into the hospital, and from which it was judged that he would in all probability have died about the time he did, whether the operation had been performed or not.

The operation itself was not attended with any such degree of pain or nervous exhaustion as to stamp it one of unbearable severity, nor was it so speedily followed by mortal symptoms as to induce us to consider it extremely dangerous; for when it was over, our patient was so well that it scarcely left the impression upon our minds of its being one of an extraordinarily formidable nature; and at the distance of ten hours afterwards, we thought him positively better even than he had been for some time before it was performed.

It is not to be overlooked in the three cases now recorded in which the aorta had been tied in the human subject, that the patients were all reduced to such a low state by disease that they were already nearly moribund before the operation was undertaken, and that therefore no parallel can be drawn between them and the cases in which the experiments were made upon healthy dogs, nor between them and the cases discovered in morbid anatomy, where the animal economy most probably had energy as well as time to prepare for the change; nor does it follow that because the operation did not save the lives of either of the three men upon whom it has been performed, that it would fail in a person whose local disease had not made irremediable progress, and whose vital energies were not undermined.

It is more than probable, however, that the operation will never succeed in a case of aneurism, as the patient must

be far advanced in danger before he could with propriety be advised to submit to a remedy attended with such imminent risk; and when the disease has advanced so far, the period at which there might be a chance of recovery from the operation is in all likelihood already passed; but in regard to the question whether under favourable circumstances nature possesses the power of re-establishing circulation in the pelvic extremities after ligature of the aorta, I would say that it cannot reasonably be doubted; and I can fancy cases of wounds and disease where it might be the only means of saving life, and where, if had recourse to in time, I think it might be employed with hope of success. It certainly has not had a fair chance in any of the recorded instances in which it has hitherto been tried, as the patients had not sufficient health and energy of constitution for effecting the vital process of collateral circulation.

Cape of Good Hope,
Feb. 21, 1834.

MEDICAL REFORM.

OUTLINES OF A PLAN FOR THE FUTURE REGULATION OF THE MEDICAL PROFESSION.

To the Editor of the Medical Gazette.

Sir,

In offering the following proposal to the consideration of the members of the medical profession, I am fully aware of the arduous task which I have undertaken; and I can only plead in excuse for my temerity, that I have spared no pains to obtain the necessary information on the subject, and that I have used my best endeavours to avail myself of the information thus obtained. My object has been threefold: first, to insure to the public a succession of competent medical practitioners; secondly, to promote the respectability and dignity of the medical profession; and lastly, to encroach as little as possible upon the rights and privileges of existing institutions.—I am, sir,

Your obedient servant,
J. Bostock, M.D.

Upper Bedford Place,
Sept. 20, 1834.

1. A Medical Board to be established by act of Parliament; to consist of five members, of which two shall be medical practitioners; two men of science connected with the medical profession, but not necessarily practitioners, or engaged in practice; one a member of the Government. The members to be appointed by the Secretary of State for the Home Department. The whole five to remain in office for three years; then one member to be changed annually, and to be replaced by an individual of the same description; the new member to be appointed by the Secretary for the Home Department. The Board to have a permanent secretary, who is to be of the medical profession. The members to be remunerated fairly, but not extravagantly, for their services; 1*l.* for every attendance, but the annual sum to each individual not to exceed 200*l.* The secretary to have a permanent salary of 200*l.* per annum; a reasonable allowance to be also made for travelling expenses. A regular account of all the proceedings of the Board to be kept, which may at any time be inspected by proper application. An annual account of all expenses to be printed and published, with the names of all the officers, and the sums of money received by each.

2. Medical practitioners to be divided into four classes:—

i. Doctors of Medicine, who are supposed to be completely educated in all the essential and accessory parts of the science; the curriculum and necessary requisites pointed out below.

ii. Masters of Surgery, equally well educated, but to pursue a somewhat different curriculum; this pointed out below.

iii. Licentiates of Medicine and Surgery; these equivalent to what are now styled general practitioners; supposed competent to the treatment of all ordinary cases, but of less complete education than the two first classes; the curriculum and necessary requisites mentioned below.

iv. Licensed Druggists, to be occupied in compounding and dispensing medicines; the curriculum and necessary requisites mentioned below.

The two latter departments may be united in the same individual, at the

pleasure of the party, provided he goes through the required curricula, and the necessary examinations.

The department of midwifery may be practised by any of the classes, provided they go through the required preparation and examination.

3. All penal statutes respecting medical practitioners to be abolished; the public not to be compelled to employ certain practitioners in preference to others. The duty of the government, and the object of these regulations, is to provide a sufficient number of competent practitioners, and to point them out to the public: if the public prefer irregular or unauthorized practitioners, they must be allowed to do so.

4. *Medical Universities.*—Any establishment possessing the required number of professors or teachers, giving the required number of courses, the courses being of the required length and extent—there being also a certain number of pupils actually paying fees, and the establishment having existed for a certain number of years—is to be recognized as a medical school, or university. The pupils of such universities are capable, according to the regulations hereafter mentioned, of becoming candidates for degrees or diplomas. The medical board are to decide upon the claims of medical establishments to be admitted into the list of recognized schools or universities.

5. Apprenticeships to be discontinued, and pupillage to be substituted in their place—*i. e.* medical practitioners, of all descriptions, may be allowed to take pupils. The arrangements between the practitioners and the pupils to be discretionary, but the board to have the right of deciding, in each case, how far the terms are available to secure the privileges attached to them.

6. The medical curriculum for each of the four classes to be at least five years; of these, for the degree of doctor or master, three at least must be spent at a recognized medical school or university; and for the degree of licentiate, or druggist, one at least; the remainder of the term under pupillage, during two of the five years, in the three first classes, the students must attend regularly the practice of an hospital. The board to decide upon the size and arrangements of the hospital—whether it be available for the purpose intended: such institutions to be entitled authorized hospitals. A candidate for the degree of doctor of medicine is to attend the following university courses:—Practice of Medicine, Anatomy, Physiology — of each two courses. Practice of Surgery, Chemistry, Materia Medica, Midwifery, Medical Jurisprudence, and Botany—of each one course. The six first of these courses to be of six months' duration; the lectures to be given five days in the week, each lecture an hour in length; the remaining courses to be of three months' duration. Only four courses, except clinical lectures, can be attended in the same year. An individual proposing to practise midwifery, must, in addition to the other requisites, attend two courses of midwifery in an university, and the practice of a hospital of an appropriate description for one year. A candidate for the degree of master of surgery must pursue the same curriculum with the doctor of medicine, except that he must attend two courses of the practice of surgery, while only one of physiology will be required. The licentiate and the druggist will be required to attend at least one course of the practice of medicine, of the practice of surgery, of anatomy, of chemistry, and of materia medica. Certain foreign universities may be admitted for a part of the curriculum; the board to decide what foreign universities shall be available for this purpose. A student who has gone through the preceding curriculum of public and private education, may become a candidate for a degree.

7. A Board of Examiners to be appointed, to consist of five members, two being members of the Medical Board, the other three being elected from among the professors of the Medical Universities. The Universities may have the privilege of sending a member in rotation; but this not to be compulsory.

8. The existing Universities and Colleges, like other learned bodies, may grant honorary degrees, but a degree conferred by the Board of Examiners is alone to be considered as entitling the party to be styled Doctors of Medicine, &c., and to affix the appropriate letters to their name. The existing practitioners to be invited to go through the new forms, but this not to be compulsory. When a candidate has previously received an honorary diploma, the Board are not at liberty to remit any

part of the ordinary examination at their discretion.

9. For a doctor's or for a master's degree, the candidate is to prepare a dissertation on some professional topic. All candidates are to undergo the necessary examinations in such manner, and in such number, as may be hereafter determined by the Medical Board. The examinations are to be conducted in the English language, but the candidates are to be examined as to their knowledge of Latin. The examinations are to be held in London, twice in the year; in the first week in May, and in the first week in September. A candidate to give a month's notice of his intention to be examined. The candidate to pay 10*l.* for a Doctor's or Master's diploma, and 5*l.* for the diploma of a Licentiate or Druggist.

10. The Medical Board shall have the power of visiting or of appointing visitors for the Universities and authorized hospitals; the time of these visits to be discretionary, but in no case less than once per annum in each institution; detailed minutes to be kept of these proceedings.

11. All elections of medical professors in the Universities, or of medical officers in the authorized hospitals, to be confirmed by the Medical Board.

12. Nothing in this act to affect or interfere with the property or rights of the present Universities or Colleges, except so far as concerns their power of granting degrees, and of prohibiting individuals from practising; in order, however, to enjoy the benefits of the act, they must conform to the above regulations.

13. The above system, in all its parts, to remain in force for the space of five years, then to be revised by a parliamentary commission; the same to be repeated every five years.

TREATMENT OF NASAL POLYPI.

To the Editor of the Medical Gazette.

Sir,

Upon looking over my papers the other day, I found a communication from an old friend and brother officer, on the subject of polypus, which is of too much importance to pass unrecorded. The paper was transmitted to me in 1833, shortly before a serious illness, or the substance of it should not have been so long withheld from the profession. The article itself is probably too extended for the limits of your journal; but I shall condense it in such a manner, I hope, as to satisfy the author, and at the same time put the profession in full possession of his successful method of treating polypus.

Mr. Joseph Dallaway, divisional surgeon of the Coast Blockade, states that in seventeen cases of common nasal polypi, he has succeeded in curing them all without forceps, or any other mode of treatment than a solution of the sulphas zinci in water, in the proportion of from ℈ij. to ʒj. of the former, in ℥j. of the latter. This lotion, he states, is to be introduced up the nostril by means of lint, which has been well moistened with it, and the lint spread over the surface of the tumor, as far up as can conveniently be effected, by means of a probe or director. This lint must be kept moistened by dropping-in the solution of zinc four or five times in the day, and then by removing it night and morning, to be replaced with a fresh piece of such moistened lint. Mr. Dallaway states that his seventeen cases were all cured of the disease within a fortnight, by this simple remedy. He does not state, however, that any of the cases enumerated were of a malignant nature, but merely the common soft species of polypus, as I understand him.

Mr. Dallaway first adopted this practice in polypus, he says, so far back as 1797; and aptly remarks, that it *may* be equally successful in certain cases of polypus uteri. I must say, that upon the receipt of this paper, I tried the remedy in my own practice at the Westminster General Dispensary, and in three cases of the soft common polypus I succeeded, within ten days, in removing the disease; and I understand from my colleague, Mr. Thomas Chevalier, that he was equally successful with one or two others.

With every apology to my friend Mr. Dallaway, for retaining his valuable communication so long, I am, sir,

Your obedient servant,

A. Copland Hutchison.

3, Duchess-Street, Portland Place,
Sept 30th, 1834.

GLOSSITIS TREATED BY INCISIONS.

To the Editor of the Medical Gazette.

Sir,

Should you consider the following interesting case worthy the attention of the profession, I shall feel obliged by its insertion in your widely-extended journal.—I am, sir,

Your obedient servant,
C. Ferneley, M.R.C.S.

Denton, Sept. 15, 1834.

William Jenkinson, æt. 38, labourer, complains this day (July 6, 1834) of stiffness of the lower jaw; difficult deglutition, but little pain; the parotid and submaxillary glands somewhat enlarged; the amygdalæ faucium natural; taste depraved; flow of saliva increased; tongue slightly furred, and has small aphthæ on its apex; pulse rather frequent; has but slight febrile symptoms; bowels constipated. He attributes his ailments to drinking cold water when hot. He was ordered to take an aperient immediately; the saline mixture, with antimony, at intervals; to wash the mouth with sage-tea and vinegar, and apply warmth to the enlarged glands.

July 7th.—Pain in the head; the difficulty of swallowing and enlargement of the glands much increased, especially on the left side; tongue swollen, and painful to the touch; skin hot and dry; pulse 100, full; bowels opened.

V.S. ad ℥xvi. Leeches to be applied to the throat. Calomel and James's powder to be taken every four hours.

I saw the patient again in about six hours; he had great difficulty of breathing; countenance much distressed; tongue exceedingly painful, and enlarged so as to fill the mouth, which could not be quite closed.

The leeches would not bite. I made three deep incisions on the dorsum of the tongue with a scalpel, each incision being more than an inch in length, and from which several ounces of blood escaped.

To continue the medicine and gargle. To apply a linseed poultice to the throat.

There was almost immediate relief; in a few hours the swelling of the tongue had much subsided, and he now could articulate plainly.

8th.—Much better; swelling nearly gone. The incisions seem only like superficial scarifications. Has passed a good night: has but little pain. Fever much abated.

To continue the remedies.

9th.—Better.

To omit the poultice to the throat.

11th.—No pain; no fever; can swallow solids. Tongue clean; incisions nearly healed; pulse low and feeble.

To take Sulphate of Quinine in Inf. Rosæ Co. three times a day.

13th.—Much better; incisions scarcely perceptible. Has had, yesterday and to-day, a few occasional spasmodic twitchings in the sterno-cleido-mastoid, and in the muscles inserted into the os hyoides, especially in those of the left side.

15th.—The patient has had no return of the spasm, and to-day went to his usual work.

EXUDATION OF SALT FROM THE SKIN.

To the Editor of the Medical Gazette.

Sir,

As saline exudation occurs rarely, I should feel obliged by the insertion, in the Medical Gazette, of a brief notice of a case in which it took place.

I am, sir,
Your obedient servant,
C. J. B. Aldis, M.A. M.B.

13, Old Burlington-Street,
Sept. 30, 1834.

Henry Fox, æt. 55, was admitted under one of the physicians of St. George's Hospital on November 9th, 1833, complaining that he was attacked, November 3rd, with dyspnœa, having been previously in good health, though occasionally subject to palpitation of the heart. This was followed by swelling of the abdomen and scrotum; much pain in the chest; cough, without expectoration. Can lie low in his bed, but only on the back. Was sixteen years ago attacked in the same manner.

Pulse 88; tongue whitish; bowels regular; urine very scanty, not a pint having been passed for six days.

November 26th.—Is reported to have perspired very profusely last night. A white powder upon both temples.

27th.—The white powder over a more extended surface.

28th.—Deposit of white powder, as yesterday. The white, apparently saline, deposit very abundant on the face, in points and circular spots. I took some of the saline matter to Dr. Prout, who was kind enough to analyze it, and found the great bulk to consist of common salt.

Swediaur has seen an inveterate case (of gout), in which the patient, labouring under a paroxysm of several months' duration, had the entire surface of the body covered every morning with a white powder, as though he had been dusted with flour*. Dr. Mason Good conjectured that it was urate of soda thrown off by the skin.

MEDICAL GAZETTE.

Saturday, Oct. 4, 1834.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

MEDICAL RESPONSIBILITY—AFFAIR OF M. THOURET-NOROY.

OUR brethren in France are once more on the *qui vive* regarding their professional privileges. If we knew nothing of the French beyond their ever-zealous endeavours for their rights, political and professional, we might presume that their code of laws, after such perpetual struggles, must be the most perfect in the world; that a freedom, well-regulated and of an exalted kind, must form its very basis; and that the principles of national liberty must be there so well laid down as to bid defiance to misconstruction. Yet, perhaps, there is no nation in Europe more unhappily circumstanced in this respect: no people seem in theory to understand liberty better—none in practice to enjoy it less. They appear to labour under certain unfortunate defects of system. In their anxiety to hedge themselves in from the encroachments of arbitrary power, they become entangled in the meshes of their own legislatorial refinements: they wish to leave nothing to the discretion of judges and juries; and their code, with all its apparent simplicity and comprehensiveness, either falls short in its practical application to many cases that arise, or requires in each instance the support of *arguments* from the dispensers of justice, which, like most other arguments, always provoke discussion, and often most bitter contrariety of opinion.

The particular case which at present engrosses the attention of our French brethren is one that only justifies the actual excitement by the principle which it involves. M. Thouret-Noroy, a practitioner of respectable standing, has been amerced in heavy damages, by the decisions of two successive tribunals, for alleged malpractice. The strict justice of the case, so far as we have been able to gather the details, does not seem to have been very impartially regarded by the legal authorities; the results, at all events, are unfortunate, and fully warrant the sympathy, as well as the active benevolence, displayed by the profession in Paris. The circumstances tend strongly to show the necessity of having the question of the limits of medical responsibility settled. A more anxious feeling, perhaps, never prevailed on any subject among the several orders of French practitioners; the great majority being pervaded with the laudable desire of obtaining protection from the vexatious and often indecent processes at law, to which they are constantly exposed; and, certainly, if they only persevere in the spirit which seems at this moment to animate

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* Nov. Nosol. Meth. Syst. i. p. 218.

them, it were unreasonable not to augur a favourable issue to their exertions.

The affair of M. Thouret-Noroy may be briefly related. This gentleman, a highly respectable provincial practitioner, formerly physician-in-chief to the hospital of St. Quentin, had the misfortune, in bleeding a patient, to open the brachial artery. An aneurism was the consequence, which terminated so unfavourably in the hands of another medical man (one of the lowest rank of practitioners—an *officier de santé*), that the patient had to lose his arm by amputation. An action was brought against M. Thouret-Noroy: the patient was a labouring man, to whom the loss of a limb was a heavy infliction; and the local court of Evreux awarded him ample damages. Such is the bare outline of the case, in which the facts alleged are supposed to have been duly proved; but we must give the reader some idea of the sort of evidence by which the charges were substantiated.

One of the first witnesses for the prosecution, a peasant friend of the plaintiff, stated that it was he who recommended Dr. Noroy to be called in; that he was present during the operation of bleeding; that the blood spouted forth vigorously, and *foamed and frothed* in such a manner that *he did not think it was quite right.* Another man deposed that M. Noroy threw the blood out of the window. After this, some dozen or more witnesses, chiefly villagers and labouring people, were admitted to give *their opinions* on the nature of the tumor: some said it was as large as an egg, and inflamed; others that it was yellow, red, brown, or blue; some, again, affirmed that the Doctor dressed the patient's arm with a fluid which burned wood, reduced linen cloth to powder, and destroyed every thing it touched. Then came M. Chouippes, the *officier de santé*, who told how he was consulted in January 1832 (for so long is this case pending) by the plaintiff, about a tumor which he had at the fold of his arm. It was four inches in circumference, was pulsating, and could be made to disappear almost entirely by strong compression. By these signs he recognized *a circumscribed and consecutive aneurism*, and advised the patient to undergo an operation, which he (M. C.) performed. The operation did not succeed: two ligatures successively came off in consequence of rupture of the arterial coats; hæmorrhages ensued, and ultimately gangrene; so that amputation had to be decided on and practised,—always by the said M. Chouippes. On examining the vessel, he found that it had been incised smoothly by some sharp instrument, which could be no other than Dr. Noroy's lancet. In fine, he asserted that it was *impossible* to wound an artery in venesection unless one was very ignorant of anatomy, or very silly; and that *he* had had in his time ten or twelve operations of this kind to perform, which were rendered necessary by awkward phlebotomists.

On the faith of this respectable testimony a summary judgment was given by the tribunal of Evreux, from which we make the following extract:—

"Inasmuch as the articles 1382 and 1383 of the Civil Code provide for those cases in which there have been awkwardness, imprudence, inattention, and negligence of the most simple and common rules; and especially when, in order either to dissemble, or to repair the consequences of these faults, perfidious, dangerous, or inefficacious methods have been adopted, instead of seeking for safer and better advice:

"Since it has been proved by the complainant Guigne, that Dr. Thouret-Noroy, in bleeding him, opened an artery:

"Since the defendant sought to dissemble, or to repair the injury by the use of means utterly unworthy of the simplest practice:

"And whereas amputation had to be performed on the patient, as the immediate and necessary consequence of

these circumstances, taken singly or in combination:

"The Court condemns M. Thouret-Noroy to pay to the plaintiff, within eight days, the sum of 600 francs, and further to allow to the said plaintiff, from the date of bringing the present action, a life annuity of 150 francs, payable half-yearly."

Such was the harsh, ill-founded, and ill-expressed sentence pronounced by the first tribunal before which the cause was heard. M. Thouret-Noroy of course could not acquiesce in it; he appealed to the superior court of Rouen; but after considerable delay, and the accumulation of much expense, the sentence of Evreux was only confirmed by that of Rouen. The consequences have been almost ruinous to the unfortunate Noroy: were it not for the generous assistance of his professional brethren they would have been wholly so. An execution was levied on his house, and he was stripped of all the little property he had gathered during thirty years of professional life.

In this unhappy condition, his last resource has been to visit the capital, and to implore the aid of the metropolitan practitioners to aid him in applying to the court of *cassation*. The physicians of Paris have come forward, and liberal subscriptions have been entered into. At a public meeting, held on the 18th ult. and at which M. Orfila presided, two resolutions were passed, to the following effect:—1. That a letter be written to M. Thouret-Noroy, expressive of the interest which his professional brethren take in the case in which he has been involved; expressing their approval of his conduct throughout, and encouraging him to pursue his purpose of *cassation*. 2. That a subscription be immediately got up, to defray the necessary expenses of this appeal, and to indemnify M. Noroy for the losses he sustained by the judgments of Evreux and Rouen.

Some further particulars relative to this meeting may not be uninteresting. M. Sandras handed to the president a letter which he proposed to address, in the name of the assembly, to the Procureur du Roi of Evreux, in order to satisfy his mind, and to convince him that the tribunal had condemned a man who had acted strictly within the limits of the law; while it overlooked the conduct of one who had done an illegal act, and who had really infringed the provisions of the code. This latter remark, as it reflected on the conduct of M. Chouippes, and amounted to an absolute denouncement of that person, was objected to by M. Double; who thought that the communication with M. Thouret-Noroy might very well be adopted without attacking the *officier de santé*. But the majority of the assembly were for strongly expressing their opinion of Chouippes.

We think ourselves the majority were in the right. We would not, certainly, approve of *denouncing* the *officier de santé*: but, by all accounts, his conduct in the affair was as unhandsome as it was contrary to law. He broke through all the rules of decency as well as duty, in undertaking those serious operations which he practised on the patient—not only without apprising M. Thouret-Noroy, but calling in no assistance. Besides, he not only ran the risk of so hazardous a proceeding, but voluntarily exposed himself to well-merited censure; for even the most eminent surgeons would not attempt to act as he did, without consulting a brother practitioner, or having professional people to act as his assistants.

M. Dubois d'Amiens also addressed the meeting, and observed, that here there were two questions concerned—the one, which was paramount, related to the responsibility of medical men,—a question on which the meeting ought to express itself strongly; the other had simply a personal reference to

M. Thouret-Noroy. As for the latter, it might be considered as already disposed of; but it had now become so much the more essential to insist upon the first, and to shew decidedly that the tribunals were wrong, inasmuch as that of Evreux had, only two months after its judgment on M. Noroy, reversed its previous decision, in a case precisely parallel —in allowing to a Dr. Dumanoir a medical jury, which it had refused to Dr. Noroy; and in acquitting Dumanoir of the charges brought against him, condemning at the same time the plaintiff to the whole costs and expenses.

It was finally proposed that the letter to M. Thouret-Noroy should be discussed and prepared at a subsequent meeting: the names of subscribers were liberally tendered, the first on the list being that of Baron Dubois, for 500 francs: after which the assembly adjourned.

Having thus given a brief sketch of the "*affaire Noroy*," we would add a very few remarks ere we conclude. Our French brethren, it appears to us, are in this, as in most other affairs of a like nature, very sanguine and perhaps not very sober. Their ardour is not well advised. The privilege of irresponsibility, for which they so zealously contend, is surely not a little unreasonable. *Irresponsibility*, as an attribute of any member of society, is inconsistent and absurd; and if those who are ambitious to possess it, admit (as they must) that they understand the term as of course involving certain limitations, and do not take it in its strict and absolute sense, they ought at least to define those limitations, and inform us exactly what it is they mean.

We recollect that, some months ago, when the *projet* for a re-organization of the faculty was discussed in the Academy of Medicine, a clause was agreed on, almost unanimously, "That medical men should not be responsible for *errors* committed *without any bad intention*, in the conscientious discharge of their duties." But this did not go far enough for one or two zealous partizans of the irresponsibility principle; they moved as an amendment, though it was not carried, on the ground that it was superfluous, "That *in no case* should medical men be amenable to legal tribunals!" M. Adelon, on the occasion to which we allude, made some pertinent observations. "He would move," he said, "the suppression of the article proposed, because he thought that, in adopting it, society would be left unprotected and exposed to the dangers arising from the negligence and imprudence of medical practitioners. Medical men have been responsible from time immemorial, and yet science has suffered no check; on the contrary, it has made vast strides. Nor is it so very often that the courts of justice are troubled with cases of mal-practice; patients but rarely avail themselves of the privilege they possess, of suing their medical attendants for damages. Latterly, indeed," he added, "there have been some cases of the kind; but it must be confessed that, in the greater number of instances, the defendants have been really to blame."

We quote the words of M. Adelon, as they shew that French practitioners are not exactly agreed on the question of responsibility. We are ourselves far from taking part with either extreme; for though we deny that medical men should be irresponsible, in the sense of our ardent Academicians, and so far seem to side with the Adelon-party, we yet object most decidedly, and as strongly as we may, to making medical men responsible to *such* tribunals as gave judgment in M. Noroy's case. No: we hold that *every* member of society, possessing the faculty of reason, should be answerable for his actions; nor would we have medical men exempt from the general law. But herein

should lie the distinction. Let the medical man for his alleged professional misdeeds (not his *errors*, as the article in the French project would have it) be accountable and responsible;—but to whom? To the only tribunal *competent* to take cognizance of his actions—a jury of his peers. We are aware that even here there would be great difficulties to contend with—the *corpus delicti* being frequently unattainable—the imputed mischief often evanescent—the only witnesses in most cases the parties themselves—to say nothing of the different interpretations capable of being applied to medical transactions, and the unsettled opinions regarding many points of practice, among the members of the faculty. If, however, the French would take a little pains to settle preliminaries of this sort, instead of plunging into eternal discussions on abstract and useless claims, they would save themselves a great deal of trouble, and many a Thouret-Noroy from vexatious and frivolous litigation.

CHOLERA DURING THE LAST THREE YEARS—ITS GRADUAL DECREASE.

It is now two months since we ventured to offer the conjecture, founded on the experience of the last three years, that the malignant cholera had diminished, was diminishing, and would probably be less fatal this season than since its first irruption. The result has fully borne out this anticipation. In 1832, according to the bills of mortality, there were, in July, 1006 fatal cases; in August, 777; in September, 607; giving a total of 2390. In 1833 there were, in July, 181 cases; in August, 853; in September, 199; giving a total of 1233. In 1834 there were, in July, 37 cases; in August, 247; in September, 241; giving a total of 488. And in this last part of the calculation, it is to be observed that the accidental circumstance of the days of the month falling so as to give five weeks in September, makes the number in this month appear greater than it actually was; so that to allow 307 for August, and 181 for September, would be nearer the truth. The week just terminated gives only 23, whereas in the course of August so many as 103 occurred in one week.

The prospect which the above presents is by no means discouraging, and shews the entire groundlessness of the alarm sounded by one of our contemporaries* some weeks ago; which represented the disease as having broken out in London and other parts of England, with a degree of virulence which exceeded its first onset, in 1832. Nothing can be worse calculated to mitigate the evils of a fatal epidemic than exciting a panic, and we trust that the ridicule which attaches to predictions at once fearful and false, will inspire greater caution in future.

DISEASE CURED BY "COMMAND;"

OR WISE SAWS OF THE MORNING HERALD.

Before we take leave of the subject of cholera, we have a word to say to the *Morning Herald*—a paper, by the way, in which all points connected with medicine are treated in a manner as remarkable for ignorance as illiberality. It is broadly insinuated that the members of our profession have neglected the sick in cholera, from the fear of contagion; than which, an imputation more destitute of truth cannot well be conceived, unless it be the allegation which follows—namely, that "there has been a great supineness apparent upon this important subject." A "great supineness apparent!"—where has the writer lived during the prevalence of the disease?—has he been so much under the influence of terror, that he stirred not from his garret while

* The Lancet.

the epidemic prevailed? If not, how has he failed to see the members of our profession frequenting, at every hour, the abodes of the poor and destitute, because among them the disease was chiefly to be found; and to whom, regardless of time and toil, they strove to afford relief? Is it *their* fault that the malignity of the malady has hitherto baffled their efforts?—is it to *their* shame that they were suffered to labour unrewarded? or is *theirs* the blame that their efforts have in numerous instances been thwarted, and their motives perverted, by the ignorant conductors of the press?

Again, says the *Herald*, this failure in discovering a remedy for cholera, "confirms an impression which we know is entertained by many persons of the very small advance which medical science has made among us during the last half century." Is it not astounding that persons so ignorant should be suffered to circulate their pert follies in a paper said to have an extensive sale, and therefore able to employ writers who know at least something of their subject? Medical science made very small advances during the last half century! — Indeed; yet it is within this period that vaccination has been discovered,—that ague has been comparatively banished from England,—that the treatment of fever has been rendered so much more successful than formerly—that syphilis has ceased to present us with those frightful objects which were wont to shock humanity,—that the great operations on the arteries have been planned and practised,—that the stone has been crushed in the bladder without cutting,—that quinine, and morphia, and iodine, and a host of other powerful agents, have been impressed into our service,—and last, and most especially, that the average mortality has been greatly diminished, and the duration of human life, as shewn by the calculations of all actuaries, has increased, and is still increasing! But all this avails nothing as long as cholera remains without an antidote; and the *Herald* recommends that "the admitted ignorance of the profession on the subject of this novel desolating scourge should be taken up as a national concern, both in the shape of COMMAND and inducement." Taken up in the shape of *command!!* What can the blockhead mean? Can it be that he thinks there ought to be an act of parliament, or an order in council, ordaining that medical men shall cure all their cholera patients under certain pains and penalties? or is the "command" to be in the shape of exorcism, that the pestilence in question do straightway cease to molest the subjects of these realms, and that its ghost be laid in the Red sea? We have but one suggestion to offer before this be done—let there be a "command" from the proposed quarter that the writer in the *Herald* do quadrate the circle—or discover the philosopher's stone—or write a sentence of common sense on any subject connected with science—or enact any other impossibility; and when this requisition has been executed, the advice above given may be followed, and a "command" issued to the "Doctors" to cure all cases of cholera.

INTRODUCTORY LECTURES.

PRICE OF PUFFING.

WE regret that we cannot make room for the notices of Introductory Lectures which have been sent us: we advise that they be forwarded to the other journals. We cannot inform our correspondent who makes the inquiry what the expense may be of puffing notices in the newspapers:—probably he might ascertain by application at the so-called Westminster Hospital School, at Charing Cross, or in Gower Street.

A HINT TO LECTURERS.

The *Lancet* publishes what it calls a "student's number;" in which the announcements of the various lecturers are transferred from the wrapper to the pages of the journal, with remarks, laudatory or otherwise, bearing a relation to the number of times the advertisements may have been paid for, and other equally substantial reasons. On the present occasion, the prospectuses of two of the schools—viz. King's College and St. George's—are garbled, and disparaging remarks made upon them. Now it so happens that neither of these schools have sent any of their advertisements to the *Lancet*, and we learn that there is a positive (and we confess we think very absurd) order, at King's College, against doing so. We merely mention the above as a curious coincidence—not for a moment supposing that the circumstances are at all connected: we know the honesty of the Editor too well for that!

CLINICAL LECTURE

ON ENCYSTED TUMORS,

Delivered at St. George's Hospital,

By Sir B. C. Brodie, Bart.

In this lecture I shall make some observations on the case of a little girl who was in one of the upper wards with a large encysted tumor, containing watery fluid, and occupying a considerable portion of the left hypochondrium. The following are briefly the notes of the case:—

"Harriet Copeland, æt. 9, was admitted on the 12th of March, with a firm elastic tumor in the left hypochondriac region, pushing forwards the integuments, and extending backwards, beneath the lower ribs to the left side of the spine. No pain was felt on pressure. The appearance of the neighbouring skin was perfectly natural, and the patient's general health was good. Her mother states that about twelve months ago the child had received a severe blow in the left side from her schoolmistress. The pain which immediately followed soon subsided; and the occurrence was forgotten until about three weeks before she was admitted into the hospital, when, in the act of running, she struck her side with much violence against a post. Great pain followed the accident; and on examining the part, her mother first discovered the tumor, in the situation above described. At this time it was equal in size to a hen's egg, but it rapidly increased in growth, and it is now as large as an orange."

Having inquired into this little girl's case, I was led to believe that she had an encysted tumor in the abdominal cavity, and that it was probably connected with the liver. I determined, however, to keep her for some time in a state of quiet, in order that we might watch the undisturbed progress of the disease, and that I might be able to judge whether this opinion was correct. On the 30th of April the tumor had considerably increased in size, and presented to the fingers a distinct sense of fluctuation. I now punctured it with a small flat trochar, and drew off about eight ounces of a clear watery fluid, in which was found no coagulable matter. It will be unnecessary to occupy your time with the minute details of this case, the more so as they may be seen in my Clinical Book, to which you have all access. The principal facts may be thus briefly stated:—

After the operation, the patient vomited. Inflammation, beginning at the seat of the tumor, followed, and extended to the neighbouring parts. Bleeding, purging, and other antiphlogistic remedies, were of course employed. In spite of all, however, the belly became swollen, tympanitic, and tender. Shortly after a swelling, which was attended with considerable pain on pressure, shewed itself, occupying the place of the original tumor. On the 19th this had increased in size, and the fluctuation of fluid was perceptible in it; but in a few days more it had altogether disappeared, and pus mixed with fæces came away from the bowels. On the 29th a membranous cyst, of which the parietes in their contracted state were of considerable thickness, was found in one of her evacuations. From that time the patient began to mend, and was soon convalescent.

The important parts, then, of this case, may be thus briefly summed up:—There was a tumor in the left hypochondriac region filled with fluid. The tumor was punctured. The fluid, when drawn off, resembled clear water, and was found to contain no coagulable matter, or so little as to be scarcely perceptible. Inflammation ensued. A swelling, having the character of an abscess, then formed, which soon disappeared, and disappeared exactly at the same time that a purulent discharge came away from the intestinal canal. From all these circumstances, conjoined with the final separation of the cyst, it would seem, that after the operation, the cyst suppurated, and that having discharged its contents through the bowels, it afterwards made its way into them by ulceration.

The opinion which I at first formed respecting the nature of this disease, was

in a great measure deduced from two cases which were under my eare some years ago. I was consulted respecting a lady who had a eonsiderable fluctuating tumor in the right hypochondrium. It was larger than the one of H. Copeland, but in every other respect was similar to it. The only symptoms which seemed to aeeompany it, were some slight pain in the side, and some difficulty of breathing, in eonsequence of the pressure which it made on the diaphragm. A most intelligent physician, who was in attendance, thought that there was an abseess in the liver; and the first appearance of the tumor was any thing but unfavourable to sueh a supposition; but, then, there were none of those severe constitutional symptoms with which abscess of the liver is usually aeeompanied. The tumor went on increasing in size, and at last I proposed that it should be punctured. Aecordingly, this was done; and about three pints of a clear watery fluid were drawn off, containing no coagulable matter, and little animal matter of any kind. The edges of the wound were brought together with sticking plaister, and a bandage applied. After the operation, the patient was annoyed by a most violent and incessant cough, which, as it was attended with no constitutional symptoms, and with no other pulmonie symptoms, I was led to think depended either upon hysteria, or upon the sudden abstraetion of pressure from the diaphragm, or on these two causes combined. In three weeks, whatever was its cause, the cough entirely left her. No pain was felt in the situation of the puncture. She got quite well, and to my certain knowledge eontinued well for at least the space of six years. Indeed, I have every reason to believe that she is so still. A few months afterwards, a little boy was admitted into the hospital with a tumor also in the right hypochondrium, smaller than the last, but in every other respeet elosely resembling it. I treated it in the same way, that is, by puncturing it with a trochar; and the elear watery fluid which came away was exactly similar to that which had been drawn off in the other case. No inflammation, nor any troublesome symptom, followed, and the boy left the hospital as cured. Whether he remained well for any length of time, or whether the disease returned, I cannot positively say; but it is most probable that, if it had returned, I should have known it.

I shall give my reasons presently for believing that these membranous eysts were connected with the liver. But similar cysts may exist elsewhere. They are not very uncommonly met with in the breast. Not that every encysted tumor of the breast is of this kind: far from it. Sometimes, on cutting into a mammary encysted tumor, you find that the fluid, instead of being clear, like water, has the appearance of dark brown turbid serum, containing much coagulable matter. In these cases there is generally in addition to the eyst, more or less of solid substance, approaching to the charaeter of a malignant disease: I do not mean that it is aetually carcinoma; in fact, it is less liable to return after it has been removed than earcinoma, but still, if left to itself, it runs the eourse of a malignant tumor, and is incurable, exeept by operation. The speeies, however, of mammary encysted tumor which I first mentioned, in whieh there is merely a thin eyst, eontaining nearly pure water, is altogether independent of malignant disease. If after puncturing one of these cysts, and letting out the fluid which it contains, you do nothing more, you will find that when the wound heals, the eyst again fills. But if you dissect it out, taking great eare to leave none of the cyst behind, there will be no return of the disease. Sometimes stimulating applications will sueceed in effecting a speedy and a permanent cure, so that an operation may be avoided. I have known this to happen in more than one instance.

A lady, having one of these eneysted tumors of the breast, eonsulted me. It was as large as a small orange. I punctured it, and drew off a eonsiderable quantity of clear watery fluid. The wound healed up, and the eyst again filled. I then advised her to have the tumor removed by excision. She made no objection, but requested me, for certain reasons, to defer the operation for a fortnight or three weeks. This being settled, I advised her in the mean time to apply to the breast an embrocation, which was mueh used by Sir Everard Home, and, as I believe, before him by Mr. Pott, and which I have found of so much service, that I will give you the prescription. It consists of proof spirit and eamphorated spirit, of each ℥iiiss.; Goulard's extract, ℥j. A flannel is to be dipped in this, and to be applied to the part several times daily, being allowed to remain there. Well, then, to return to my ease: this treatment was followed for three weeks, at the end of which time the lady said that she was quite prepared for the operation. But now, on examining the breast, I found that the tumor had altogether disappeared. This case is the more interesting, inasmuch as the tumor was of a large size. Exactly the same thing happened in another case of mammary encysted tumor for which I proposed the operation, and which differed from the last only in being somewhat smaller in size. I do not say that in such eases the embroeation will always succeed. But it

never does harm, and has succeeded quite often enough to entitle it to a fair trial before resorting to exeision. Probably some other stimulating applications would answer the same purpose.

Tumors of the same kind occur in connexion with the testiele. The encysted hydroeele of the testiele, which is sometimes erroneously supposed to be a double or lobulated testicle, consists of nothing but one of these cysts situated between the inner layer of the tunica vaginalis and the fibrous membrane of the tuniea albuguinea. A similar cyst oecurs every now and then in the epididymis, between its convoluted tube and the tuniea vaginalis, by whieh it is invested. Then, again, it is one of the same cysts whieh constitutes the encysted hydrocele of the cord, in which disease the tumor is extremely loose and moveable; so much so, that it may, when of a moderate size, be pushed up through the external ring, not into the abdomen, but behind the tendon of the external oblique muscle, and hence it is sometimes eonfounded by an inexperienced surgeon with inguinal hernia. In all such eases, the fluid which the cysts eontain, is sufficiently charaeteristie of their nature. It is a elear watery fluid, the cases in which it is serum, like the fluid of a genuine hydrocele, being very rare indeed. In examining bodies after death, my attention has been often attracted by small membranous cysts situated between the glandular structure of the liver and its peritoneal covering. Sometimes I have seen them as large as a walnut, at other times as large as an orange; but there is no reason why they should not attain to any magnitude. Now, as we know that these tumors do oecur in connexion with the liver; that they occur but very rarely indeed in the spleen, and as far as I know, still more rarely in the other abdominal viscera; and as the position of this tumor, in each of the cases which I have described, made its attachment to the liver by no means improbable;—I suppose this was the real seat of the disease; and I think that you eannot doubt this to be a legitimate eonelusion.

In the two eases of this kind which first fell under my observation, no bad symptoms followed the operation. In this last ease, however, inflammation and suppuration were the consequence of it. The cyst seems to have contracted adhesions to the colon, and having discharged its eontents into it, eseaped, by ulcerating its way probably into the transverse areh.

As soon as I saw that the tumor had returned, my determination was to make an opening into it, and to give exit to the confined pus; but, while I was waiting for a good opportunity of doing this, a purulent evaeuation from the bowels took plaee, and of course it was then too late for what I had intended.

There can be no doubt of the propriety of puncturing cysts of this kind, when they have attained sueh a magnitude as to be inconvenient from their bulk. There is no reason for puncturing them sooner, and there are good reasons against it. The object of the operation is simply to draw off the watery contents of the cyst, and if these should become again eolleeted, the puncture may be repeated. In Copeland's case, however, there can be no neeessity for any seeond operation. The eyst having suppurated, and afterwards sloughed, there must be a radical cure of the disease: but we must acknowledge that this advantage has not been obtained without the patient having ineurred a certain degree of risk, which we should endeavour to avoid in future. In the two former cases I merely drew off the water, without taking any great pains to empty the cyst completely. In this last I *now* think that I was over anxious to obtain this last objeet; and to the pressure which was in eonsequence made on the cyst, while the eanula remained in it, I cannot but, in great measure, attribute the inflammation, suppuration, and sloughing of the cyst, which followed.

You will perhaps inquire, for what reason did I puneture the cyst with a trochar instead of using a laneet? The answer is plain enough. The cyst is more readily emptied by means of a canula than without it; and if there were no adhesions of the eyst to the peritoneum lining the abdominal muscles, and you were to puncture it with a lancet, the fluid would escape into the cavity of the abdomen,—an evil which must be avoided when the operation is performed with a troehar.

GLASGOW EYE INFIRMARY.

Melanosis and Ossification of the Eye.

John Taylor, æt. 41, admitted 13th May, 1834. About nine years ago, while in America, the vision of the left eye beeame dim, and was soon lost entirely. At present the bulb of the eye is shrunk and knobbed. There are still traees of cornea, behind which is a white substanee, apparently the lens. Adhering to the bulb of the eye, at its nasal side, there is a prominent tumor larger than a pea, smooth on the surface, covered by the conjunctiva, and firmly attaehed to the bulb: pressure on the tumor oecasions pain. Is troubled with uneasy feelings in the

forehead, especially over the left brow. There is inversion of right lower lid, and the consequent friction of the eyelashes seems to excite irritation in the tumor. Vision of right eye good.

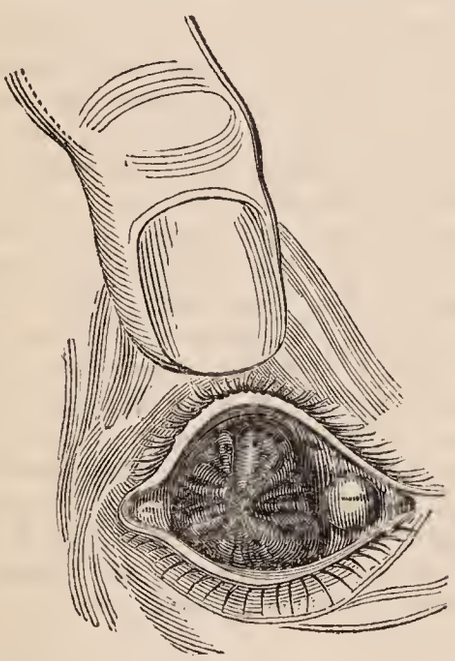
May 19th.—The inversion of lower lid having been cured by operation, the tumor was this day removed with the scissors; its contents were dark-coloured and of considerable consistence, so that the tumor did not collapse.

May 23d.—A greyish fungus protruded in the situation of the tumor.

30th.—Eye free from pain; tumor stationary.

The patient was advised to have his eye extirpated; but unwilling to submit to the operation, he discontinued his attendance at the Infirmary. He however returned on the 5th August, and signified his wish to have the operation performed.

August 6th.—The nasal half of left eye is occupied by a dark-coloured soft tumor, about the size of a filbert, the anterior surface of which is marked with a



stellated scar, the result of the former operation. The tumor, he says, is rapidly growing; considerable pain on left side of head down to the neck, preventing sleep. Stomach very irritable; bowels rather loose.

7th.—Left eye extirpated by Dr. Mackenzie. A small cut having been accidentally made into the edge of each lid, those were brought together each by a stitch. Nothing was introduced into the orbit, but the lids were covered with a piece of simple dressing and a roller.

On examination, the whole eye was found atrophic. The cornea, as could be seen before the operation, was not more than two Parisian lines in diameter; it was, however, clear, so that the opaque lens could be seen through it. The optic nerve was much reduced in thickness; indeed, nothing but the neurilema of the fibrils seemed to be left, all the medullary matter being absorbed. The tumor, which was about five or six Parisian lines in diameter, protruded through an opening in the sclerotica, on the nasal side of the dwarfish cornea. It was covered externally by a production of the conjunctiva. On making a section of the tumor, it was found to consist of a light bistre-coloured tissue, nearly of the consistence of muscle, which, when torn, indicated a fibrous structure. The section through the tumor being continued through the eye ball, this was found to have undergone extensive disorganization. There were some remains of the choroid and annulus albidus, but the retina was substituted by a bony lamina, and the neurilema, which was all that remained of the optic nerve, at the place where the latter joins with the retina, had several earthy deposits in it; the lens was entirely converted into an earthy matter, which affected a laminar arrangement; the capsule was very tough. There was no trace of iris or posterior chamber; the anterior chamber was very small. All the rest of the interior of the eye was filled by a melanotic mass, of pappy consistence, from which the tumor appeared to rise. There was besides this, towards the inner side and back part of the eye, a small mass of a reddish-white substance, like brain, and a small quantity of a soft dark-red matter. In the interior of the tumor some red matter was also observed, surrounding and isolating a nodule of the bistre-coloured tissue from the rest of the mass.

The pappy melanotic matter contained in the interior of the eye, being examined with a microscope, was observed to be composed of black particles of no definite form; interspersed among which were some minute crystals, of a rhomboidal shape. The tissue composing the tumor (which, as has been said, was somewhat fibrous), on examination with the microscope was seen to consist of flattened globules, considerably larger than those of the blood, united together in fibres by a delicate cellular tissue. The most of the globules were light-coloured, but there were interspersed among them a great number of dark-coloured bodies, which appeared to be globules containing in their substance black particles. The brain-like and dark-red matters were also composed of globules, but very few black bodies were observed among them.

August 11th.—No pain since the operation; rests well in the night. Stitches removed.

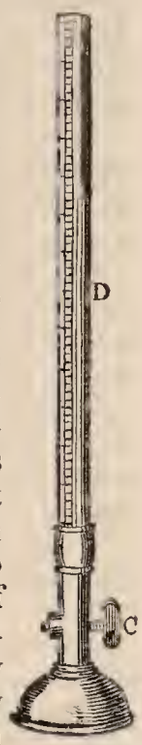
20th.—Quite free from the pain felt before removal of the eye.—Dismissed.

ACADEMY OF SCIENCES, PARIS.

Monday, Sept. 1, 1834.

THE SPHYGMOMETER.

M. MAGENDIE read a report, drawn up by himself and M. Serres, on an instrument called the *sphygmometer*, intended not only to measure the pulse (as its name implies), but to render visible those several varieties of the circulation which are usually observed by the sense of touch. If this contrivance (said M. Magendie) were really competent to set before the eye the principal phenomena of the arterial circulation,—if it could supply the means of measuring, and of course of expressing precisely, by signs similar to those by which variations of temperature, for example, are denoted—then would the sphygmometer, as it is called, prove an important acquisition in medicine; for even the most practised physician, no matter how delicate his sense of touch may be, is far from possessing, in his investigations by the pulse, a degree of certainty like that which results from the use of the thermometer. But it requires at least as much practice to learn the proper use of this instrument, as it does to become acquainted with the ordinary indications of the pulse: nor are the results in any degree more exact. We have taken two persons, both familiar with the sphygmometer, and causing each successively to apply it to the radial artery of one and the same individual, we have requested them to write down separately what they ascertained by the instrument: the results, as stated by the parties, have been materially different (*sensiblement divergents*).



The inventors of the sphygmometer, like most other inventors, promise and predict great things, as about to spring from their contrivance: they state, on the faith of facts which your reporters have not been able to verify, that the indications afforded by this instrument will furnish certain signs by which medical men may detect the presence of several maladies whose diagnosis is at present obscure. While we are ready to admit that the sphygmometer is an ingenious thing, and not unworthy of trial in the hands of physicians, we can by no means partake of the sanguine hope of the authors: we moreover think, that if MM. Herisson and P. Garnier intend to reach the object at which they aim, they must, by some modification in the apparatus, render its use more simple, and free from the necessity of conjectural approximations.

In conclusion, the reporters propose that the thanks of the Academy be given to MM. Herisson and Garnier, for their communication, and that those gentlemen be requested to simplify their instrument, if possible, so that the fidelity of its indications may no longer depend, as at present it does, on the cleverness and nice precautions of the observer.—Adopted.

Dr. Herisson has sent us his pamphlet on the *Sphygmometer*, from which we had the engraving in the opposite column copied, on a reduced scale. D represents a graduated capillary tube, in which the ascent of the mercury at each stroke of the pulse is observed. The lower part, or bowl, of the instrument is to be applied to the artery: and C is a stop-cock, which is closed till every thing is prepared.

THE ITCH INSECT.

THE detection of this minute animal has created quite a sensation among the *savans* of Paris. M. Renucci, a student of the Hôtel Dieu, has been the first to put beyond a doubt the existence of the genuine Acarus *scabiei:* he has in consequence, beside the credit due to him for his success, netted 300 francs, which M. Lugol, a few years ago, offered for, or rather wagered against, the discovery of the insect. All the descriptions hitherto given of the *A. scabiei*, by Bonomo, De Geer, Baker, Alibert, and others, have been inaccurate and fanciful: they would have better served to represent the mite of cheese. The true *A. scabiei*, like the mole, has its forelegs strongly developed, while its hind quarters are comparatively feeble; it is thus enabled to burrow under the cuticle, and to make a road for itself as it proceeds. Plans and drawings of the animal, on a greatly magnified scale, have been laid before the Institute by M. Beaude; and M. Raspail, whose skill in exploring minute objects is so celebrated, is engaged with his microscope in procuring further details.

We learn from a letter addressed by M. Renucci to the Academy of Sciences, that in the year 1825, while he was attending his brother's practice in Corsica, he often had an opportunity of observing the method pursued by women of that country in extracting the acarus, usually called by them the *pedicello*. M. R., aware that the existence of the insect was denied by many eminent naturalists and physicians on the Continent, took pains to ascertain the signs of its presence; he devoted a good

deal of study to the subject, and thus was enabled recently to point out the true A. scabiei to M. Alibert, at the Hôpital St. Louis.

The proper mode of proceeding for the purpose, is to examine the vesicles of an itch patient newly infected, and not yet under cure. At the base of any one of them will be found certain little furrows, going off in different directions, some towards the summit of the vesicle, others running round it, and others again prolonged beneath the neighbouring skin. Observe the furrow which diverges most from the vesicle, and at its extremity will in general be detected a white point, visible with the naked eye. This white point, where the cuticle is slightly elevated, corresponds to the posterior part of the insect. In warm countries, says M. Renucei, I have further been able to discern the head, which is brownish. Whenever we can distinguish two such points, we may be almost sure of finding the insect. In order to extract it, we must pierce the cuticle with a needle, at about the distance of half a line from the white point, when, by gently dividing the epidermis upwards, the acarus is laid bare, and easily removed.

It is not rare to find it at the base of the vesicle; sometimes it is even found on the sides; but very rarely, or perhaps never, on the top. Most likely it was owing to this circumstance that many of those who sought the acarus scabiei with such industry *in* the vesicle or its fluid, were induced, from their want of success, to deny its existence altogether. The figure given by De Geer is, according to M. Renucei, rather that of the itch insect of the horse, than of the A. scabiei of man.

But after all, says a writer in the Journal Hebdomadaire, it does not follow that this insect, the presence of which we have ourselves witnessed, is the real cause of the itch. It still remains to be seen whether there may not be genuine itch without an insect—whether the acarus now detected be the same in all patients affected with scabies—and whether it be not found in other animals, or even in animal or animalized substances, placed in circumstances favourable to the propagation of insects, such as heat and humidity.

CHOLERA IN A MARE.

By Mr. E. C. Bull, V.S. Huntingdon.

I was called at 5 P.M. on the 15th of the present month, to see a mare, five years old, with a foal of six months, belonging to Mr. Knighton of Huntingdon. She was perfectly well in the morning; but I found her at the time stated very much tucked up, voiding copious watery stools, of a fœtid smell and dark colour; the pulse at the submaxillary artery quick and very feeble; extremities very cold, the nose and ears particularly so; the eyes very dull; the breathing much oppressed; and there seemed to be suppression of urine. I bled her, and obtained with difficulty three quarts of dark treacley blood. I gave her ℥j. of laudanum and ℥j. of spt. nitrous ether, and administered an injection of laudanum and starch.

Seven o'clock.—Much the same. I attempted to bleed her again, but could only obtain half a cupful. I repeated the injection, and blistered the belly largely.

On the morning of the 16th she was much worse. I repeated the injection, allowed her to drink five quarts of warm water, and blistered the legs.

Eleven o'clock A.M.—Purging stopped; pulse not to be felt; breathing very difficult; tongue blue, cold, clammy; the lips also very blue.

One o'clock P.M.—She fell down as if cramped; voided more fæces, of a much lighter colour, frothy, and with a putrid smell; and there was much twitching of the legs. This gradually subsided, and about three o'clock she died very calm.

Post-mortem examination.—Bowels much distended with flatus, and congested in several places; as also was the bladder, and especially the lungs, which were gorged with blood; but there was nothing like inflammation of them, or solidification, or effusion.—*Veterinarian.*

HYDROPHOBIA COMMUNICATED BY A COW.

It has been asserted by some who hold a high rank both in the veterinary and medical world, that rabies can be communicated by those animals only who use their teeth as weapons of offence. We have often wondered at the unhesitating and dogmatical way in which this assertion is made, for we are ignorant of any theoretic principle on which it could be possibly grounded; it is contrary to occasional facts, well known to all who have paid attention to the subject; and it is likely to lead to dangerous and fatal neglect of proper precautionary means.

A late number of the Journal Théorique has added another to the cases of death succeeding to inoculation with saliva from a rabid ruminant, and also of the fearful period during which the virus may remain inert in the frame.

A cow, in the department of Jura, was bitten by a dog affected with rabies. Some

time afterwards she became dull, and refused all kinds of food. She approached to some water which was offered to her, and made repeated but fruitless efforts to swallow it. A woman that had the care of her imagined that some foreign body was lodged in the pharynx, and prevented the animal from swallowing; and she thrust her hand into the mouth of the beast, and to the very back part of it, but found nothing. In doing this her hand was slightly scratched by one of the teeth of the animal. It was soon afterwards sufficiently plain that the cow was rabid, and she was destroyed by order from the magistrates.

A year afterwards the woman began to have frightful dreams, in which she thought that she was pursued by two enraged animals, the cow, and the dog by which it had been bitten. She had dread of water, and she died of rabies in a state of horrible suffering, attended by circumstances peculiarly lamentable.—*Ibid.*

MIDWIFERY SCHOOL AT GUY'S HOSPITAL.

To the Editor of the Medical Gazette.

Sir,

Having read a pamphlet by Dr. Blundell, calculated to produce an erroneous impression, I am anxious to prevent such a result by a very brief statement of facts.

Dr. Blundell has certainly retired from Guy's, and there are connected with his retirement some circumstances requiring an explanation, which his letter does not afford. It must be supposed from the statement, "that the gentleman whom the Treasurer seemed desirous to patronize," and the insertion of whose name as a joint obstetric lecturer appears to have been the grave indignity which the Doctor could not brook, was a nominee, or protegée, of the Treasurer, unknown, or nearly so, to Dr. Blundell.

The entire reverse of this is the fact. Nine years ago negociations were entered into between Dr. Blundell and myself, without the Treasurer's knowledge, the object of which was my succeeding to the obstetric chair; a large pecuniary consideration being required by Dr. Blundell. But as it was intimated to me that the Treasurer would not for a moment listen to, or allow, any arrangement founded on a pecuniary basis, I abandoned the idea, but continued my obstetric pursuits at the hospital. In 1829-30, in consequence of new arrangements which then took place, I was requested by Dr. Blundell to give clinical instructions to his pupils. It had been recommended by the Doctor to have a lying-in ward; but instead of it, the present Hospital Lying-in Charity was established, and cases of uterine disease were admitted into a part of the hospital appropriated to that purpose. I then received a communication from Dr. Blundell, requesting that, as his duties were increased, and his health uncertain, I would officiate as his obstetric assistant. It was not till this period that I had the pleasure of being personally known to the Treasurer. I gave the clinical lectures for two or three seasons; I saw and treated nearly all the cases in the obstetric ward; I had the entire charge of the Hospital Lying-in Charity, and of the obstetric out-patients; and I gave forty out of the forty-three midwifery lectures in the spring course of 1834, having been solicited to do all this by Dr. Blundell himself.

Surely, then, the circumstance of my name being associated as colleague (for it had been so already as obstetric assistant), is no justification of the indignation he expresses. Can it be deemed extraordinary, after what I had done, that I should express a strong wish that my name should be included in the lecture papers, as colleague; so that, in the event of renewed illness, and his requiring a large share of help from me, I should appear before the class on the proper footing, and prevent the doctor's inability being regarded as a breach of faith, either on his own part or that of the school?

If Dr. Blundell has retired from Guy's, it is (to use his own words) because "sic jubeo, sic volo, stet pro ratione voluntas."

It appears, by his own statement, that he might have resumed the chair, if he had not considered it "redolent and reeking with the indignity that stained it." I may be allowed, perhaps, to express my surprise and regret that this indignity was supposed by him to consist in my being called upon to act as his colleague, instead of his representative; in which situation I had reason to believe, from the close attention and numbers of the class, that my services had given satisfaction. Dr. Blundell, however, evinced his prompt determination to retire, by the immediate removal of his museum; a step unattended by inconvenience, as the rich museum of the hospital is well provided in the obstetric department.

I may here, perhaps, just observe that Dr. Blundell was introduced to the Treasurer by his respected predecessor, Dr. Haighton, in the same manner as I have been by himself; but it is somewhat singular that he has not alluded to the exertions of his honoured relative, from

whom he received a class greater in number than it has since been. The present high repute of the hospital and school, in all its departments, is too well known to call forth any remarks from me. I trust I have shewn that Dr. B.'s statement, "that he had not introduced the gentleman whom the Treasurer thought right to patronize," is not correct.

I am, sir,
Your humble servant,
SAMUEL ASHWELL.

13, Devonshire Square,
Oct. 2, 1834.

COLLEGE OF PHYSICIANS.

THE annual appointment of officers took place last Tuesday, when Sir Henry Halford was re-elected President; Drs. Cholmeley, Royton, Roget, and Roots, Censors; Dr. Turner, Treasurer; and Dr. Francis Hawkins, Registrar.

COLLEGE OF SURGEONS.

Members admitted in the Month of September, 1834.

Thomas Dixon, Preston.
George Crutch, Londwater, Bucks.
Wm. R. Williams, Caernarvon.
James A. Wills, Brompton, Middlesex.
Wm. T. Tyson, Canterbury.
Samuel Maberley, Webb-Street, Borough.
Frederick C. Gray, Alton, Hants.
Francis Anderson, Belfast.
John Griffin.
Peter G. Heatley, Manchester.
James Jeffares, Dublin.
Wm. Phillips, Broeton Grange, Salop.
Benjamin Blower, Shrewsbury.
Lewis Davies, Llandiloes.
Edward H. Moxon, Rochester.
John L. Lucas, Northampton.
Simon Murchison, Bath.
Joseph Schofield, Aston-under-Line.
Charles H. Higgins.
John Smith, Wigton.
Bellas Moses, Brampton, Cumberland.
William Getty, Liverpool.
Alfred Morson.
Milward Pagson, Southampton-Street, Fitzroy-Square.
Charles Leah, Penzance.
Charles L. Parker, Long Acre.
James M'Dermott, Newmarket, county of Clare.

ST. THOMAS'S HOSPITAL.

DR. BURTON was, on Monday last, elected Physician to St. Thomas's Hospital, in the room of Dr. Elliotson, resigned.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *Sept.* 30, 1834.

Abscess	3	Fever, Typhus	2
Age and Debility	43	Gout	2
Apoplexy	6	Heart, diseased	4
Asthma	1	Hooping-Cough	7
Cancer	2	Inflammation	35
Childbirth	4	Bowels & Stomach	10
Cholera	23	Brain	3
Consumption	57	Lungs and Pleura	2
Constipation of the Bowels	1	Insanity	6
Convulsions	37	Jaundice	1
Dentition or Teething	8	Liver, diseased	3
Dropsy	11	Measles	10
Dropsy on the Brain	10	Small-Pox	6
Dysentery	1	Sore Throat and Quinsey	1
Epilepsy	1	Spasms	3
Erysipelas	1		
Fever	10	Stillborn	23
Fever, Scarlet	11		

Decrease of Burials, as compared with the preceding week . . . 267

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, *Latitude* 51° 37′ 32″ *N. Longitude* 0° 3′ 51″ W. *of Greenwich.*

Sept. 1834.	THERMOMETER.		BAROMETER.	
Thursday . 25	from 41	to 63	30·09	Stat.
Friday . . 26	51	64	30·04	to 29·92
Saturday . 27	50	68	29·86	29·83
Sunday . . 28	51	67	29 95	30·05
Monday . . 29	47	65	30·14	30·18
Tuesday . . 30	41	63	30·11	30·07
October.				
Wednesday 1	44	62	30 08	30 05

Wind variable, S.E. prevailing.

The 25th generally clear; 26th and 27th cloudy; with rain at times on the morning of each day.

Rain fallen, ·25 af an inch.

The innumerable swarms of a small black fly, which have continued without intermission during the last three days, are as remarkable as they are annoying to the traveller.

CHARLES HENRY ADAMS.

DR. RAMSBOTHAM'S LECTURES.

We have completed Dr. Ramsbotham's lectures on Midwifery. In our next (not the present) volume, we shall give those on the Diseases of Women and Children.

CHOLERA.

WE regret that we cannot give insertion to the various communications on Cholera which have been sent us. Such papers, unless they really present something original, are of no interest to our readers generally.

NOTICES.

The notice of the Weymouth and Dorchester Medico Chirurgical Book Society can only be given as an advertisement.

We regret that we cannot make room for Dr. Howison's paper on Botany.

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SATURDAY, OCTOBER 11, 1834.

LECTURES

ON

DISEASES OF THE CHEST,

In the course of which the Application of

PERCUSSION AND AUSCULTATION

ARE FULLY EXPLAINED,

Delivered at the London Hospital,

BY THOS. DAVIES, M.D.

LECTURE II.

THEORY OF THE SIGNS OF DISEASES OF THE LUNGS—(continued.)

MECHANISM OF THE CHEST.

WE now proceed to the consideration of a subject immediately connected with that which we discussed in the last lecture; namely, the examination of the structure by which the important organs of the lungs and the heart are protected, and of the mechanism by which that structure adapts itself to the constantly-varying capacities of the lungs.

When we reflect upon the great importance of the functions performed by the lungs and the heart, so important that their cessation for a very short period, indeed, would be productive of death, we must naturally suppose that there should be some protecting envelope or case for them. When we recollect, also, that the lung, particularly, is constantly varying in its capacity; that at one moment it enlarges, that at the next it diminishes in performing the acts of inspiration and expiration, we see that it is necessary that the case which protects it, should also have the power of dilating and contracting to follow these movements. We find, therefore, that the double function of protection and mobility is beautifully effected by an organization of bones, muscles, and cartilages, known under the appellation of *the chest*.

Before we proceed to explain the functions which the chest performs, we must first take a glance at its structure. The gentlemen around me must be generally acquainted with that structure, but still it is requisite that we should take a general view of the subject.

Position and form of the chest.—As to the position of the chest, it is placed at the upper part of the trunk, between the cavities of the cranium and abdomen. Its form is that of a cone, whose apex is above, and truncated, and whose base is below, large and open; at least it should be so in a well-formed subject: if, however, you were to examine the chest in a living individual, you would form a very false notion of its shape. It would then appear that the base of the cone was above, and the apex below. This arises from the length of the clavicles, and from the shoulders, which give a breadth at the upper part, and from the narrowness of the waist below: in some persons, particularly in females who have acquired the unfortunate habit of binding the waist too much, this is still more apparent.

Structure of the chest.—We will now examine the structure of the chest. In the first place, we have it formed anteriorly of the sternum and costal cartilages; posteriorly, of the vetebral column, particularly of the bodies of the vertebræ; and laterally, of the ribs.

Sternum.—The sternum consists in early life of five bones, and on its anterior surface there are four transverse lines indicating their former separation. Anteriorly, it is slightly convex, and covered merely by the aponeurotic expansion of the sterno, mastoid, and pectoral muscles, and by the skin; posteriorly, the bone is a little concave. At the superior portion there are articulating surfaces for the clavicles, and also for the first ribs. The inferior portion is terminated by a point, called the ensiform or xiphoid cartilage. There are, laterally, seven depressions for the seven corresponding ribs.

Ribs.—The ribs are twelve in number on each side: the seven superior are called thoracic or true ribs, and are articulated by the intermedium of cartilage directly to the sternum; the five inferior are termed false or abdominal ribs, each being articulated anteriorly to the one above it by cartilage, and thus indirectly with the sternum. The two last ribs have merely cartilaginous tips, and are called the loose or floating ribs. The ribs are flattened in front, and gradually become more rounded behind. Their length is various; the first is the shortest; the second is nearly double the length of the first: they progressively increase to the eighth, and then gradually diminish until the last. Their breadth also varies: the first may, perhaps, be considered the broadest, the second is somewhat less, and we find a gradual diminution as we descend.

Direction of ribs.—The next point to which I shall call your attention, is the direction of the ribs, and this is a matter of considerable importance in relation to their movements. The first rib arises nearly at a right angle with the vertebral column, and the acuteness of the angle increases as we descend from the first, so that each rib being inclined outwards and downwards increases also in the obliquity of its course, and the result of the particular direction is, to give to the whole lateral parts of the chest a general inclination downwards and forwards. Each of the ribs taken separately presents a twisted form, the point of torsion being at its angle. Anatomists describe each rib as having a posterior or vertebral head, a cartilaginous end, and a body. The head of the bone is articulated with the sides of the bodies of the two corresponding vertebræ, with the exception of the first, eleventh, and twelfth, which are each connected to a single vertebra. The head of the rib is supported by a short neck. External to the neck, there is a process called a tubercle, which has an articulating surface, and is connected with the transverse process of the vertebra below it. This is the case with all the ribs, except the first and the two last. The bone then becomes somewhat flattened, and is bounded by an angular projection, which is removed farther and farther from the tubercle as we descend towards the last rib: this is called the angle, and is, as I have already said, the point of torsion or twisting of the bone. The sternal extremity is hollowed out and thin, for the insertion of the cartilage. The external surfaces of the ribs are convex, and covered by muscles and skin; their internal surfaces are concave, and lined by the pleura. They have a superior and inferior edge. Observe the grooves in the inferior edges for the intercostal arteries, arteries which might possibly, but not probably, be wounded in the operation of paracentesis thoracis.

Generalities; external surface of the chest.—Having considered the chest in its separate bones, let us now examine it generally. In the first place, it has an external and an internal surface; a superior and an inferior circumference. The external surface may be considered in four points of view, in its posterior, anterior, and two lateral regions. In the posterior region, you see [referring to a skeleton] the spinous processes of the dorsal vertebræ, and the gutter on each side of them; the transverse processes of the vertebræ; the tubercles of the ribs; the spaces between the tubercles and angles, enlarging as we descend, and the angles forming an oblique line from above downwards and outwards. On examining the chest anteriorly, we first notice the sternum in its centre, and on each side there are the cartilages of the ribs. These cartilages gradually enlarge as we descend, and form an oblique line from above downwards and outwards. The lateral regions are convex, and formed by the bodies of the ribs.

Internal surface of the chest.—Internally, the chest is to be considered in relation to the same positions as externally; that is, the posterior, anterior, and the two lateral regions. Posteriorly, we have the convex surface of the bodies of the dorsal vertebræ. Observe that the dorsal vertebræ decrease in size from the first to the fourth, by which the antero-posterior diameter is there so much increased: the vertebræ then gradually enlarge to the twelfth. In this region, too, you perceive the articulation of the heads of the ribs. Anteriorly, there is the posterior surface of the sternum corresponding to the anterior mediastinum and the cartilages of the ribs. The lateral region presents a concave surface, covered by the pleura.

Superior and inferior circumference of the chest.—The superior circumference is formed by the sternum, by the first rib on each side, with its cartilage, and by the anterior part of the body of the first dorsal vertebræ. The inferior circumference is bounded by the last dorsal vertebra, by the last or floating ribs, by the successive edges of all the false ribs, and by the xiphoid cartilage.

Such is a general view of the anatomy of the bones of the chest.

FUNCTIONS OF THE CHEST.

Protection.—We will now proceed to the functions of the chest, and the first to which we must advert is the protection it affords to the thoracic viscera. Let us consider this subject in relation to the regions we have just described. We will suppose the case of a force being directed

against each of these parts. Posteriorly, great protection is afforded to the chest by the spinous processes and bodies of the vertebræ, and also by the large mass of muscles of the back. Two modes of protection are afforded by the upper part of the lateral regions, one only by the lower: thus, the seven superior ribs, arched, and consequently of the best form to afford a resistance, have each two abutments, the one vertebral, and the other, by the intermedium of a cartilage, sternal. When a blow is expected, a strong inspiration is made, the ribs are then carried outwards, their extremities become more fixed, and their arches are rendered firmer, and the force is received with a *resistance;* but when the blow is unexpected, when there has not been time to effect a deep inspiration, the whole chest *yields* by its admirable elasticity, and the force of the shock is disseminated and lost over its whole surface, often with perfect impunity to its structure: but the five inferior ribs being so indirectly connected with the sternum, cannot have their anterior extremity fixed in the same firm manner as the seven superior by the deepest inspiration; they protect not, therefore, by *resisting*, but by *yielding*.

The anterior region affords also two modes of protection; namely, by resistance and by yielding: the sternum is slightly convex or arched: its two extremities are moveable, the inferior most so; and when a strong inspiration is made, the sternum is elevated, particularly at its xiphoid portion, and the bone is thus firmly fixed, and *resists* a force applied to it; if, however, that force be unexpected, it *yields*, and the shock is diffused over the chest, and lost.

An illustration of the two modes in which a force may be received is, I dare say, familiar to most of you: thus, in catching a ball, struck, I will suppose, from a bat, a tyro at the game will advance his hand to receive it, and will suffer according to the resistance he gives; while the experienced player allows his hand and arm to yield, and the force of the ball is diffused over the whole of his body.

Movements.—The next important function which the chest has to perform relates to its movements. In order to understand the movements of the chest, we must first study it in its various diameters: these are three. In the first place, we drop a line perpendicularly at the upper aperture of the chest, midway between the sternum and vertebral column to the diaphragm, and we call that the *perpendicular* or *diaphragmatic* diameter. We then take the measurement from the posterior part of the sternum to the anterior part of the bodies of the dorsal vertebræ, and we term that the *antero-posterior* or *sterno-vertebral* diameter. We then measure the chest across from rib to rib, and denominate that the *transverse* or *costal* diameter.

In consequence of the conoid form of the chest and of the oblique direction of the diaphragm, which is the base of the cone, these diameters vary in different parts: thus, the perpendicular is greater at the posterior portion of the chest, and shorter as we advance towards the sternum; the antero-posterior is longest from the xiphoid cartilage to its opposite dorsal vertebra, and shortest from the first bone of the sternum to the first dorsal vertebra; the transverse is broadest at the lower part of the thorax, and becomes gradually narrower as we ascend.—[Shewn by the skeleton and diagrams.]

Movement of inspiration.—There are two movements of the chest, the one by which we inspire a certain quantity of air, and consequently increase the capacity of the lung; and the other by which we expire, and therefore diminish the capacity of the organ. Every time we inspire, it is necessary that the chest should enlarge in one or other of its diameters, in proportion to the quantity of air inhaled: this is self-evident. What, then, is the diameter which you would, *à priori*, suppose would first increase? Of course, where the resistance is the least, and that is the diaphragmatic. In the act of expiration, the diaphragm is convex towards the lung and concave below; but in proportion to the quantity of air inspired, it descends and presses the abdominal viscera before it, and this increase in the capacity of the chest is sufficient for the ordinary inspirations in a healthy person; indeed, in old age, when the ribs become more fixed, the respiration is carried on alone by the diaphragm. When, however, the respiration becomes difficult, it is then necessary that all the diameters of the chest should be increased to their full extent: to understand this, let us suppose a case of extreme dyspnœa, as that arising from severe peripneumonia; on observing the patient, you will see that he is seated in nearly an upright posture, with his head thrown back, and his arms widely extended.

The head and neck are directed backwards, and are firmly fixed by the action of the muscles arising from the back, and inserted into the occipital bone: these parts becoming thus firmly fixed, the sterno-cleido-mastoidei act from them upon the sternum and clavicles, and draw the chest directly upwards. The clavicles being thus rendered firm, the subclavii muscles passing from them to the first ribs, elevate those ribs, and render them fixed points also: but, you are aware, that these ribs are not only elevated by the subclavii, they are still more powerfully so by the scaleni.

The first ribs being thus fixed, the second

are elevated and fixed also by the action of the double layer of the intercostal muscles, the fibres of which decussate each other, so that the action of one series would be to elevate the second ribs *obliquely* upwards; but the result of their united actions would be to draw them *directly* upwards [diagram]: the second ribs being thus fixed, the third are elevated in the same manner by their intercostals, and so on to the last, each rib becoming alternately a moveable and a fixed point.

The whole of the ribs become thus elevated; but as they are directed obliquely downwards towards the median line; as the intercostal spaces, particularly of the false ribs, are wider anteriorly than posteriorly; and as these latter ribs are more moveable from these circumstances, and from their greater length and mode of insertion of their cartilages, so the sternal extremities of them all, but particularly of the abdominal, are elevated more than their vertebral, and their bodies are consequently thrown outwards. You have only to place your hands on the sides of the thorax in making a deep inspiration, and you will distinctly feel this. If the ribs are thrown outwards, the transverse diameter must be increased in proportion.

The *antero-posterior* diameter is enlarged as a necessary consequence of the elevation of the ribs; for, at the moment of that elevation, the sternum is pushed upwards, particularly by the cartilages of the false ribs; consequently the space between that bone and the bodies of the dorsal vertebræ must be augmented.

I have stated to you that the arms are also extended in extreme cases of dyspnœa: the superior extremities are thrown out, at acute angles, from the body, or are elevated above the head, to become fixed points, from which the ribs may be acted upon, and drawn outwards, to increase the transverse diameter of the chest. Thus, the pectoralis major being connected with the outer edge of the bicipital groove of the humerus, spreads broadly upon the upper parietes of the thorax, and acts upon the cartilages of the true ribs; the pectoralis minor, attached to the coracoid process of the scapula, elevates obliquely upwards the second, third, and fourth ribs; and finally, the serratus magnus, passing from the inside of the base of the scapula, and fixed by nine digitations into so many of the corresponding upper ribs, most powerfully draws them directly outwards, the scapula at the same time being fixed by the action of the trapezius, rhomboideus, and levator-anguli scapulæ.

You may see that, by a beautiful compensation, the lower ribs, from their greater length of cartilage, and from their greater obliquity of course, are by far the most easily moved, and have therefore fewer muscles to effect their movements; whilst the upper or thoracic ribs, from their greater fixation, have a number of powerful muscles to act upon them.

Varieties of dyspnœa.—Authors have made several varieties of dyspnœa, which I shall now notice. We have first what is called *abdominal* respiration, by which we mean the moving of the abdomen to a great extent, while the chest is immoveable. When any cause prevents the extension of the transverse or the antero-posterior diameters, then the perpendicular diameter alone is susceptible of increase. Suppose the case of a patient labouring under a violent attack of pleuritis, every time he attempts to expand the chest by increasing the transverse diameter, he presses the lungs against the inflamed part: he endeavours to avoid this by breathing by the diaphragm alone. Suppose, on the other hand, there be a difficulty of moving the diaphragm, as in peritonitis, in that case every time the perpendicular diameter is increased, the viscera are pressed against the inflamed part, and the pain is aggravated: the patient therefore tries, by elevating the chest, to increase the antero-posterior and transverse diameters only. In cases also of ascites, or pregnancy, or large tumors in the abdominal cavity, the perpendicular diameter is increased with difficulty, in consequence of the mechanical obstruction to the descent of the diaphragm: patients then breathe principally by elevating the chest. This is called *thoracic respiration.*

We have respiration which is called *complete* or *incomplete.* It sometimes happens that there is an effusion of fluid in large quantity into the cavity of one or other of the pleuræ, in consequence of which the lung becomes compressed. It cannot dilate, and the ribs do not move on that side, though they are active on the other, and hence the term *incomplete respiration.*

We have also *equal* and *unequal* respiration. These terms have merely a reference to time: thus, the inspiration may be shorter than the expiration. In acute pleuritis, the inspiration is short, and the expiration long.

Sometimes we meet with the expression *frequent*, or *slow*, respiration; but these words do not require any definition.

We have also *high* and *sublime* respiration. This occurs in extreme cases, where the patient endeavours to increase the diameters in every way.

There is another kind of respiration, denominated *orthopnœa*, by which we mean that the patient is enabled to breathe only in an upright posture.

Movement of expiration.—The act of expiration is performed in the healthy state by the diminution of the perpendicular dia-

meter of the chest, produced by the elevation of the diaphragm; but when we have a forced expiration, then all the diameters are diminished: this will be best understood by explaining the mechanism by which coughing is effected.

Forced expiration—cough.—A cough is commonly an effort of nature to remove some cause obstructing the passage of the air into the lungs: thus, the tracheal and bronchial mucus, if not absorbed or evaporated in proportion to its secretion, as in catarrh, accumulates, obstructs the air-passages, and we cough, to remove the obstruction. In old catarrhal persons, the power of coughing is often lost, and they become suffocated. Persons dying of other diseases lose this power, and the mucus accumulates, and the well-known and fatal tracheal rhoncus, or rattling sound, is then heard. Other obstructing causes may exist in the lungs; as, the matter of abscesses, of gangrene, of softening tubercles, &c.

Another very frequent cause of cough arises from irritations in and about the rima glottidis. You all know the extreme irritability of that part: it often happens that it becomes slightly inflamed, and then it is in the beginning dry, and shortly afterwards it throws out a thin and acrid secretion, as we shall describe when we arrive at that subject. A violent cough is the consequence, and it is continued until sufficient mucus is torn from the tracheal and bronchial surfaces to moisten the dry state of the membrane, or to soften the acrimonious quality of the irritating secretion. This cough, from its violence, has been called "tussis ferina." Whatever, however, be the cause of coughing, the mechanism is the same: it consists in a sudden contraction of all the diameters of the chest, for the purpose of pressing the air through the air-passages with the greatest force, to carry the mucosities with it; accompanied at the same time by a *contraction of the glottis*, to afford a greater impetus to the air by diminishing the diameter of its column.

The recti-abdominales, arising from the pubes, and inserted into the sternum and cartilages of the fifth, sixth, and seventh ribs, draw the chest directly downwards, and thus act as the antagonists to the sterno-cleido-mastoidei; the two oblique and transversales, having their attachment at the cristæ of the ilia and Poupart's ligaments, pass to the cartilages of the whole of the false ribs, and draw them also towards the pelvis, the quadrati lumborum attached below to the posterior part of the cristæ of the ilium, and to the ilio-lumbar ligaments, are inserted into the last ribs, and, by their contractions, pull those ribs downwards, and fix them, and thus become the antagonists to the scaleni. The last ribs becoming thus fixed points, the last row of intercostal muscles acting from the twelfth ribs, depresses the eleventh, and fixes them; the tenth are also acted upon and fixed by their intercostals in the same manner; and so on successively to the first; so that you perceive the functions of the intercostals are reversed in the act of expiration, that difference depending upon the position of the fixed points. The triangulares sterni also operate by drawing down the cartilages of the third, fourth, fifth, and sixth ribs. The serrati, postici inferiores, the sacro-lumbales, &c. all depress the ribs.

The result of these actions is to approximate the chest to the pelvis: in doing so, the ribs are also drawn inwards and the sternum downwards, as may be distinctly felt on applying the hands to the chest during coughing: thus, the transverse and antero-posterior diameters are lessened, and, as the diaphragm is elevated at the same moment, the capacity of the thorax is diminished in all its dimensions, the lungs are compressed, and the air driven out with force.

Contraction of the glottis.—At the instant the contraction of the chest takes places, the rima glottidis contracts also, so that the column of air ascending the trachea, acquires additional force to carry the obstructing secretions with it, on passing through the narrow orifice of the opening of the larynx. The peculiar sound of cough is produced, too, by that contraction: such is the case also in spitting: however forcibly you make an expiration, not a particle of saliva will pass the mouth; the lips must be previously contracted, the fluid is then projected, and the sound of spitting is heard at the same moment.

There are several varieties of cough: we shall speak of them when we consider their particular causes.

ADDITIONAL OBSERVATIONS ON THE VENEREAL DISEASE;

Being an Extract from the Annual Report of Diseases treated in the Hospital of the 72d Regiment, at the Cape of Good Hope, in 1833.

By Thomas Clarke, Esq.

[Communicated by Sir James M'Grigor, Bart. with the Author's permission.]

The observations on the Venereal Disease submitted on a former occasion*, embraced a period of four years; the result of the experience of another year is now to be added.

* Med. Gaz. vol. xiii. p. 860.

Having, during the whole of the former period, had the opportunity and advantage of an interrupted observation of the disease occurring in a body of men constantly under my own eye, and conscious of being free from bias, I was enabled, as I believe, to give a fair and impartial trial to the mercurial and non-mercurial modes of treatment. The result was, as I formerly stated, a confirmation of the fact—a fact which had long before been established by others, that every variety of the primary disease may be cured without the use of mercury; and that this mode of treatment was to be preferred, as accomplishing a cure at a less expense of health, (though not, perhaps, of time, in the first instance);—as incurring a smaller risk of constitutional symptoms;—and as holding out an assurance, that these symptoms, when they do occur, shall be mild and tractable, and easily and effectually removed, with little injury to the constitution.

Were the merits of the question, as to the employment of mercury, to rest upon its necessity alone, I conceive they would lie within very narrow limits; but a far wider range is embraced, and important results implicated. It becomes then a subject worthy of deliberate consideration, not to be rashly taken up, nor lightly abandoned. In this spirit, and with an earnest desire to do justice to truth, as well as to those entrusted to my care, I continue to prosecute the subject.

Having come to the conclusion above stated, I entered upon the last year with a confidence in the efficacy and security of the non-mercurial treatment, which I did not before possess; and the result has been such as by no means to weaken that confidence.

It appears to me that much mischief is done in the treatment of the primary, as well as secondary, disease, by vacillation and impatience; for having, perhaps, been taught to consider and rely upon mercury as a specific, we become impatient of the sluggish process of an ulcer, and are apt to fly to its use without satisfying ourselves of the necessity, or weighing well the consequences. Or we may have some theory in our heads of the necessity of giving this remedy in sufficient quantity to secure the constitution, than which, in my opinion, there cannot be a more erroneous or dangerous principle; for, influenced by this motive, when constitutional symptoms do appear, we have recourse to a little more mercury and a little more sarsaparilla, until the disease, by its frequent recurrence, and having assailed every vulnerable part of the body in turn, has made such inroads upon the constitution, as to give the patient, at best, but a chance of lingering out a miserable existence. The accuracy of this picture may well be questioned in these latter times, but unhappily it is but too faithful, and by no means uncommon.

What quantity of mercury is necessary or sufficient, or when the constitution may be considered to be secure, would I should think be a matter of some difficulty to determine; but, from what I have seen, the constitution appears to me to be in greatest danger where most mercury is given.

It may be necessary to bear in mind that I am speaking of the disease as it presents itself in a European constitution, under the influence of a climate foreign to that constitution. That this influence is considerable has been already remarked, and in the course of the present observations I shall have occasion to bring under notice one or two remarkable instances, in which its influence is further illustrated.

Before entering upon the occurrences of the present period, it may be well to dispose of the cases which remained at the close of the last. They were two in number, and both of constitutional disease. In the first, the primary disease had been treated with, and in the second without, mercury.

The origin and progress of the former have been detailed, under the head of the fourth case, in the former observations; but before tracing it to its termination, it may be necessary to recapitulate briefly its leading characters.

The primary disease was a deep sloughing ulcer on the glans, which, showing no disposition to heal in what is considered a reasonable time, and there being nothing apparent in the constitution which forbade the use of mercury, this remedy was had recourse to, and the ulcer was healed under its use in nineteen days.

Copper-coloured blotches made their appearance on the lower extremities twenty-four days after his dismissal, for which he was under treatment six weeks. After an interval of seven weeks,

the disease returned in a more aggravated form. The eruption pustular and tubercular, with considerable constitutional disturbance. He was kept under treatment at this time for the space of eight weeks, when every appearance of the disease having vanished, he was discharged. After a lapse of fourteen weeks he returned once more, much altered in appearance, having concealed his condition and held out as long as he possibly could, which he was better enabled to do, having been on detached duty.

The symptoms now were an extensive aphthous ulcer, engaging the whole of the pharynx; constant and very distressing cough; deafness; pains in the larger joints; and an eruption of dark-coloured blotches generally over the body.

Some of these symptoms were apparently removed and others palliated, but nothing could abate the violence of the cough; and it soon became evident that all the organs of respiration were affected. The respiration became more laboured, with a wheezing noise, and the voice stridulous. The chest, when struck, emitted a dead fleshy sound, and no motion of air, or sound of any kind, could be discovered by auscultation. The expectoration, which was at first a glairy mucus, was converted into pus, and occasionally streaked with blood; and the disease assuming many of the characters of phthisis, proceeded rapidly to a fatal termination.

The appearances on dissection were as follow:—In the pharynx there was found the cicatrix of an extensive ulcer: the mucous membrane of the epiglottis was in a state of ulceration, and a deep foul ulcer had formed itself immediately under the rima. The whole of the mucous membrane of the larynx and trachea was highly vascular, and studded with numerous small ulcers. These appearances were continued downwards, and increased towards the bifurcation of the bronchi. The lungs of the right side were one mass of tubercles and vomicæ, in various stages, and wholly impervious to air. They adhered every where firmly to the pleura costalis, excepting in a part of the inferior lobe. In this space there were about two pints of turbid serum, mixed with flakes of coagulated lymph, and the surfaces of both portions of the membrane were found coated with this secretion.

The lungs of the left side exhibited the same appearances, adhering also in several places to the pleura, by which several cavities were formed, which were filled with dark-coloured fœtid matter.

The internal surface of the small intestine exhibited a dark plum colour, in which there were numerous ulcerations well defined, with elevated and indurated margins. These ulcers became more numerous towards the termination of the ileum, and in the cœcum the mucous membrane was almost totally destroyed. These were all the morbid appearances which were detected.

Upon what particular circumstance, whether of habit, influence of climate, or idiosyncrasy, the fatal result may have depended, or whether they may all have been concerned, must be a matter of difficulty to determine. That mercury was the cause of all this mischief may be deemed an unwarranted assertion: all that is certain is, that it did not prevent it. If it is objected that it was not given in sufficient quantity to guard against secondary symptoms, I would answer, that the system was affected by it, and kept under its influence until the sore was healed. The advocates for moderation would not have sanctioned more. What then have we to guide us in the use of this remedy? since it is admitted on all hands that there are circumstances under which it may act as a poison. There are peculiarities of constitution which may be manifest, but there are also others, and secret influences, against which we cannot guard.

Seeing, then, the possibility of doing harm, and that in no instance coming under my observation, in which mercury has been abstained from, has the disease caused any serious injury to the constitution, much less proceeded to a fatal termination, I feel myself justified in prosecuting that line of treatment; and there is, at least, no discouragement to do so, when I view this case in connexion with the other which was under treatment at the same time, and which resembled it in many respects so closely.

In the latter, the primary sore was situated exactly on the same part, and was as precisely as possible of the same character. It was healed in 38 days, without the use of mercury. Two months afterwards a papular eruption appeared, with slight pains in the elbow-

joints, both of which symptoms were entirely removed in the course of three weeks by the usual treatment. In the meantime, this man, who had at no time been remarkable for sobriety, had fallen into habits of greater intemperance, and these, together with a sudden vicissitude in the weather from extreme heat to cold, as I conceive, brought the disease once more to light. The symptoms on this occasion were an erythematous inflammation of the fauces, pains in the shoulders and elbow-joints, and a pustular eruption from head to foot, but more general upon the lower extremities. At the end of two months he was discharged to all appearance perfectly well, every symptom of the disease having disappeared, excepting a discolouration of the skin on the lower extremities. However, five months afterwards he made his appearance once more with the eruption, now confluent on the lower extremities, but no other symptom of disease, and the general health not at all affected. By confinement to the horizontal posture, simple antiphlogistic treatment, and the local application of a solution of sulphate of zinc, the ulcers were all healed, and the integuments had recovered their natural texture and appearance in the course of two months. Taking counsel of former experience, he has reformed his habits, and fifteen months have elapsed without any return of disease. The cicatrices are still visible, but his health is uniformly good, and his constitution unimpaired.

It will be observed that, in the Return of this year, I have brought every case of venereal sore which has been admitted into hospital, under the head of ulcer of the genitals. This may be considered a very unscientific arrangement, but it has this advantage, that as it pretends to nothing, it cannot mislead. I have already confessed my inability to classify the disease, according to what is called the syphilitic and non-syphilitic character; and the more attentively I observe the various appearances, the more I find the subject beset with difficulties. The distinguishing characters of sores are so frequently blended together as to be almost lost; and if syphilis is to be known with certainty only by the character given to it, of its constant tendency to progress, unless checked by the operation of mercury, all I have to say is, that I have not yet met with syphilis at the Cape of Good Hope.

The cases of ulcers which have been admitted into hospital during the last year, amount to twenty-seven. Although not so numerous as in former years, they have not failed to exhibit the same diversity of character. It would be waste of time to describe the various appearances; suffice it to say, that between the small superficial secreting sore, and the suppurating ulcer with hardened edge and base, there have been examples of every variety which have been observed on former occasions. They have all been cured without the internal use or external application of one grain of mercury. The period under treatment of the simple ulcer has varied from six to fifty days. The average of the whole number rather less than twenty and a half. Of the cases of bubo, which in every instance proceeded to suppuration, the period under treatment averaged thirty-three days.

Every man was discharged fit for duty. Upwards of twelve months have elapsed in some instances, and not less than four in any, and no symptom of constitutional disease has appeared. Shall we then come to the conclusion that not one of these cases has been syphilitic, but the effect of what has been called "morbid animal poisons?" We can hardly do so, unless we admit that the latter are in all respects as noxious to human life as the former, which will leave us with a distinction without a difference. For we have seen on former occasions, sores of precisely the same characters, in the same class of persons, and derived from the same sources, entailing consequences extending to life and limb. How then are we to reconcile these conflicting results? I see no other way of escaping from the difficulty than by supposing, that the poison has of late undergone a change, not a mysterious and inexplicable, but a natural change, the consequence of some alteration in the condition of the infecting subject. The number of prostitutes in this town, with whom soldiers have intercourse, is not great: their haunts are well known, and being aware that apprehension and imprisonment in an hospital (to persons of their habits of life a most grievous punishment) are the certain consequences of disease being traced to them, they have a powerful inducement to endeavour to prevent the communication of disease. This caution on their parts, together with the sweep that is occa-

sionally made of them, are sufficient, I think, to account for the change in the character of the poison, as well as the decrease in its frequency. If then it be admitted that the poison is capable of undergoing a change from malignity to mildness, and *vice versâ*, (and of that there is as much proof as can be expected in such cases,) I see no reason to deny to this poison the power of producing a variety of sores of itself, leaving out of question the influence of the receiving habit; but if we at the same time take into consideration the effect of the combined influence, the difficulty to my mind is entirely removed, and consequently I am prepared in all cases of ulcers to admit the identity of venereal poison.

[To be concluded in our next.]

ON THE COMPARATIVE MERITS

OF

DR. BELLINGERI'S AND SIR C. BELL'S WRITINGS

AND OPINIONS ON THE FUNCTIONS OF THE FIFTH AND SEVENTH PAIRS OF CEREBRAL NERVES.

By G. Negri, M.D.

On the Physiology of the Seventh Pair of Cerebral Nerves.

If the comparative view of what has been published at different periods by Dr. Charles Bellingeri, in Italy, and Sir Charles Bell, in England, on the physiology of the fifth pair of cerebral nerves, has excited a certain degree of interest amongst those members of the medical profession who more particularly direct their attention to physiology, I feel confident that what I am going to relate on the physiology of the seventh, will not be found of less importance.

It will, however, appear quite evident to every one, both from what has been already published on the fifth, as well as from what we shall see on the seventh, how highly improper it is for any body to enter into critical arguments against an author's opinions without having first read his works, or, if read, without understanding well the contents of them.

Mr. Alexander Shaw begins his criticism on Bellingeri's opinions on the physiology of the seventh, with the following sentences: "In the second place, the Italian physiologist differs from our English physiologist in regard to the functions of the *portio dura*. The opinion here too, like that in the former instance, is just of such a nature as to present the widest breach between these two physiologists that could be imagined by any one resolved to put them in absolute contrast. Bellingeri *conceives* that the *portio dura* is *a compound nerve;* that it is endowed with both *motion and sensation. I have shewn* that Sir Charles Bell describes it to be a *nerve of motion only, and altogether devoid of any property of sensation**."

Sir Charles Bell, when comparing the symmetrical system of nerves with that of the respiratory nerves, in his first paper, read in July 1821, says, "If the nerves be exposed in a living animal, those of this class (the former) exhibit the *highest degree of sensibility;* while, on the contrary, nerves not of this original class or system *are comparatively so little sensible*, as to be immediately distinguished; insomuch, that the quiescence of the animal *suggests a doubt* whether they be sensible in any degree whatever†." And when speaking of the nerves of respiration, in his paper read in May 1822, he says, "In page 25, we have traced the nervous system in the lower animals, and we have seen that the regular ganglionic system of animals of the lower class is sufficient for motion and sensibility. But that call which gives occasion to inspiration is quite unlike pain from external impression, as the act it excites is unlike voluntary motion. It is an instinctive impulse; powerful in the moment of birth as at any after period, which calls the respiratory muscles into action; and the motion it produces is of that instinctive or automatic kind which is perfect from the beginning."—"*A new sense*, and a new concatenation of motions, require *a new nerve*, a distinct centre, or origin, and a new apparatus of muscles‡." And more particularly of the *portio dura*, in the second part of the paper on the nerves of the orbit, he says, "The respiratory nerve of the face performs two offices, one of which is voluntary, as in moving the cheeks and lips in speech; and the other in-

* See Med. Gaz. July 19, p. 562.
† Sir Charles Bell's last work, p. 63.
‡ Ibid, p. 119.

voluntary, as in moving the nostrils in breathing during sleep, or insensibility*."

Thus it is evident that Sir Charles Bell had not *originally* considered the *portio dura*, together with the other nerves, so called, of respiration, entirely deprived of sensibility. He ascribed to them a power both of involuntary and voluntary motion; and for this *new sense* of action, considered necessary a *new kind of nerve*, distinct from those of common motion and sensation. In what this *new sense* consisted, or by what means the power of involuntary motion was exclusively bestowed on those muscles, which, although under a partial control of the will, also act independently of it, was never stated by the English physiologist.

In relating, however, some experiments on the respiratory nerves, he gives the following statements regarding the respiratory nerves of the face and neck, in his paper read May 2, 1822:—

"When apparent death had taken place, the ass was so far reanimated by artificial breathing, that the act of respiration recommenced; these muscles on the face and neck were restored to activity, and become subject to regular and successive contractions, as in excited respiration, whilst the chest remained at rest. These actions continued for a short time, and then ceased; but upon artificial respiration being again produced, the same results followed. This was repeated several times; the animal remaining *insensible during these experiments, and incapable of voluntary motion* †."

"Upon stimulating the nerves after the death of this animal, it was observed that the class of respiratory nerves retained their power of exciting their respective muscles into action, long after *the other nerves had ceased to exert any power;* they were evidently of that class which retain their life the longest‡."

Now, if, according to Sir Charles Bell, "a pure or single nerve has the influence propagated along *it in one direction only, and not backwards and forwards* §," how could these involuntary actions of the respiratory nerves of the face and neck have been reanimated by artificial respiration, after the animal had lost all the *other powers of motion and sensation*, if not by admitting the combination of these two powers joined together in the nerves of respiration?

The Italian physiologist, when speaking of involuntary muscular action, never ascribes it (as one would be induced to believe, from the incorrect statements of Mr. A. Shaw) to a simple nerve. In mentioning the involuntary actions of different muscles of the face, we have seen them distinctly attributed either to the intermixture of the muscular branches of the fifth with others of its ganglionic portion, or to anastomosis of the latter with filaments from the seventh. In endeavouring to explain the involuntary actions of the muscles of the internal organ of hearing, he refers them to the junction of the ganglionic portion of the fifth with other filaments from the seventh, when the involuntary motions of the iris are explained by the combination of two distinct nervous powers, from the third pair, and the ophthalmic branch of the fifth, which constituting a *new organic centre of action, partially independent of the will* (the ophthalmic ganglion), becomes thus the moderator of that delicate dioptric apparatus. Moreover, if any voluntary motion may be ascribed, or has been observed in the iris, this has been distinctly referred to the mere influence of the third, and not of the fifth.

Still Mr. A. Shaw, when speaking of the supposed coincidence of opinions of Sir Charles Bell and Bellingeri, says,—

"The English physiologist maintains that a nerve consisting of a single root can possess only one of the two functions, sensation or motion; that it cannot have these incongruous properties combined. Does Bellingeri subscribe to this fundamental principle of the whole discoveries? In each of the two nerves, which are the subject of his dissertation, *he contradicts this principle in the most decided manner.* The large root of the fifth *he represents as conferring both motion and sensation;* and he affirms the same thing with regard to the portio dura! *The only thing in common established between these two authors is simply this: they both composed papers in which the names portio dura and fifth pair occur!* Fluellen, *with 'his figures and comparisons,' could have devised a far better parallel* !*"

* Ibid, p. 210.
† Ibid. p. 141.
‡ Ibid. p. 142.
§ Ibid. p. 232.

* Med. Gaz. July 19, p. 563.

Having already shewn how far Mr. A. Shaw's statements are *correct* in regard to the ganglionic portion of the fifth, let us proceed with our parallel between these two authors' opinions on the seventh.

Sir Charles Bell, in his first paper, read in July 1821, says: "The respiratory nerve of the face, being that which is called *portio dura* of the seventh.....goes off from the lateral part of the *medulla oblongata*, and escaping through the temporal bone, spreads wide to the face. All those motions of the nostrils, lips, or face generally, which accord with the motions of the chest in respiration, depend solely on this nerve. By the division of this nerve, the face is deprived of its consent with the lungs, and all expression of emotion*."

"The respiratory nerve of the face arises from the superior and lateral part of the *medulla oblongata*, close to the *crus cerebri*, and exactly where the *crus cerebelli* joins the *medulla oblongata*. The other respiratory nerves... arise in a line with the roots of this nerve†."

"The nerves on which the associated actions of voluntary and excited respiration depend, arise very nearly together. Their origins are not in a bundle, or fasciculus, but in a line or series, and from a distinct column of the spinal marrow. Behind the *corpus olivare*, and anterior to that process which descends from the *cerebellum*, called sometimes the *corpus restiforme*, a convex strip of medullary matter may be observed; and this convexity, or *fasciculus*, or *virga*, may be traced down the spinal marrow, between the *sulci*, which gives its rise to the anterior and posterior roots of the spinal nerves. From this tract of medullary matter, on the side of the *medulla oblongata*, arise in succession, from above downwards, the *portio dura* of the seventh nerve, the *glosso-pharyngeus* nerve, the nerve of the *par vagum*, the *nervus ad par vagum accessorius*, and, as I *imagine*, the phrenic, and the external respiratory nerves‡."

The characteristic distinctions of these nerves, according to Sir Charles Bell, are the following:—"*They do not arise by double roots; they have no ganglions on their origins;* they come off from the *medulla oblongata* and the upper part of the spinal marrow*."

Bellingeri, in his anatomical dissertation, cap. ii. *De septimo nervorum pari, sive de nervo faciali*, describes its origin as follows:—

§ LVI. p. 100.—"This nerve, as I had an opportunity of observing, together with the celebrated professor of anatomy Rolando, and the doctor of surgery Gallo, dissector of anatomy, takes its origin, in the first instance, from the medullary fasciæ of Malacarne. We saw, in fact, a medullary bundle on either side, about the size of the fourth nerve, proceeding from the exterior of the medullary fascia, and from about the middle of its length. This bundle, forming a concave arch upwards, ran round the inferior extremity of the corpus olivare, appearing to us to have some connexion with the latter: it then, continuing nearly of the same thickness, ascended to the outer side of the corpus olivare, and a little apart from it, but over the corpus restiforme, and having a manifest connexion with it. About the middle of the corpus restiforme, the fasciculus seemed to us to be joined by a medullary filament given off from the fourth ventricle; and then, upon reaching the base of the corpus restiforme, it fell in with the trunk of the eighth pair, or acoustic nerve, in company with which, proceeding through the quadrilateral fovea of Malacarne, leaving, behind the annular prominence, the substance of the brain, it became enveloped with the pia mater, and thus formed a nervous trunk. We all distinctly saw, admired, and were greatly delighted with this structure; our subject being an adult man, whose brain was of a good consistence. The same structure, however, is not invariably found in all subjects; oftentimes it is not a bundle, but expanded filaments, which are observed at its origin: sometimes, too, they come out not beneath, but above the corpus olivare.

"This origin of the facial nerve, as observed by us, perfectly coincides with that described by Girardi and Santorini; who say that the portio dura emerges above the arciform process†, and some-

* Last work, p. 65.
† Id. p. 70.
‡ See paper read in May 1822, "Origins of the respiratory nerves," p. 129.

* Last work, p. 64.
† The arciform process is the name given, by Santorini, to those oblique fibres which surround the lower extremity of the corpora olivaria.

what above the corpora olivaria, from the inner and lower part of the annular prominence, where it is connected with the peduncles of the brain; so that this portio dura entirely corresponds with the crura cerebelli."

§ LVII. pp. 103-105.—"Further, the facial nerve consists of two portions—one, the larger, which is lateral; the other, which is internal, smaller, first discovered and accurately described by Wrisberg. The larger portion, at its commencement, resembles a little band, which farther on becomes fibrous, and, on leaving the substance of the brain, is enveloped with the pia mater, and appears as a slender tapering nerve. But the lesser portion consists of two or three filaments, with very delicate roots, which proceed partly from the substance of the pons in the quadrilateral fovea of Malacarne, intermediate between the facial and acoustic nerves, and partly emerge from a spot close by the origin of the glossopharyngeal nerve. We have borrowed the description of this portion from Scarpa, who represents the origins of the two parts of the facial in a neatly and beautifully-executed engraving*.

"Soemmering says that some of those filaments arise from the annular protuberance itself; and Vieussens, in speaking of the facial nerve generally, states, 'that they adhere on both sides to the annular process, which gives off to them (namely, the portio dura and mollis) some minute fibres.' But the lesser portion of the facial is situated between the larger portion and the acoustic nerve, and its fibres, as they proceed onward, unite into one or two nerves. The minor portion at length approaches the greater, and forms a close junction with it: sometimes, however, this is not the case, unless in the internal auditory canal, and then it seems, in the cranium, to constitute a part of the acoustic nerve. On entering the internal auditory canal, it recedes from the acoustic, becomes intimately connected with the facial, emerges along with it from the cranium through the aqueduct of Fallopius, and is distributed to the face.

"Cuvier† also mentions this double origin of the facial nerve; one portion of which, he says, has a laminous form, the other a fibrous aspect. This double origin is more remarkable in the calf, for as the common root proceeds, another is added to it, arising from a considerable ganglion situated in the posterior part of the nervus vagus, and which communicates with the great sympathetic. Its origin from the ganglion consists of two or three filaments, which, as they unite, become much enlarged*. I myself, in company with Dr. Riberi, saw a thick and tapering filament in the dead body of a woman, proceeding from the middle lateral and somewhat superior part of the corpus olivare, and uniting with the facial nerve, which we observed to be distinctly divided into two fasciculi.

"Thus the origin of the facial nerve should be threefold—namely, as it proceeds from the medullary fasciæ, from the restiform bodies, and from the corpora olivaria: perhaps we should also add, from the pons varolii."

I shall proceed, in my next article, with the physiology of the seventh nerve.

G. N.

Oct. 6, 1834.

* Disquisit. Anatom. de Audit. et Olfact. p. 52. Tab. viii. fig. 5.

† Leçons d'Anat. Comp. tom. ii. p. 146.

* Cuvier, op. cit. t. ii. p. 227.

SURGICAL CASES

Treated in the Naval Hospital of St. Petersburgh.

By Harry Leeke Gibbes, M.D.
Member of the Royal College of Surgeons of London.

Case I.—*Violent Contusion of the Hypogastrium — Antiphlogistics — Recovery.*

Tichan Denisoff, æt. 47, a helper in the Admiralty stables, of robust make and sanguine constitution, was received into the General Naval Hospital of St. Petersburgh, with a severe contusion of the lower part of the abdomen, from the kick of a horse, late in the evening of the 26th June, 1833. Syncope continued for some minutes after the injury, but on admission to the hospital re-action had fully taken place.

Six grains of Calomel, with 3ss. of Jalap, were administered, and ℥xxx. of blood taken from the arm.

27th.—Early this morning, as the bowels remained constipated, ol. ricini, ℥jss. was given, and a stimulating enema thrown up; and as no urine had been passed, I applied the catheter, and drew off two pints tinged with blood. In the evening, tension and

tumor of the abdomen, from the umbilicus to the pubis, and extending to the lumbar regions, had taken place. Fifty leeches were applied over various parts of the swelling, and the bleeding encouraged. The bowels still continuing inactive, I gave him one drop of croton oil, with directions that another drop should be repeated at the expiration of three hours, if required.

28th.—Has taken two drops of the ol. croton with good effect; ten or twelve copious black and fœtid stools having been voided. Warm fomentations of chamomile, poppy heads, and cicuta, constantly applied around the belly, evaporation being prevented by surrounding the whole with prepared oiled-cloth.

29th. — The patient much excited. Pulse 115, and full; pain on pressure increased.

V. S. ad lb. ij. instanter.

8 P.M.—Blood buffed and cupped. Feels relieved. Pulse reduced to 95, and soft. Parts less tumid and painful.

A dose of the saline Senna mixture to be occasionally taken.

30th.—Has had some refreshing sleep towards morning. Catheter applied three times daily. Bowels twice evacuated; pulse 90; swelling subsiding. Visited him at 9 o'clock in the evening, and, as he complained of a dull obtuse pain in the region of the kidneys, ordered two cupping-glasses to be applied over each loin, by which a sufficient quantity of blood was abstracted.

July 1st.—Inability of making water still demands the use of the catheter. Urine highly coloured, and rather fœtid, depositing a lateritious sediment. Mucilaginous diluent drinks continued, with now and then a dose of the laxative mixture. In the evening a warm-bath. It is probable that the dark colour of the stools and urine was occasioned by the blood thrown out by the capillary vessels of the intestines and urinary passages, in consequence of the violence of the concussion—a sort of contre-coup.

2d.—Has enjoyed some hours' sleep. Urine clearer, and the tumor considerably diminished. Pulse 85, and soft. The warm fomentations persevered in, as affording much relief.

3d.—Found the patient labouring under occasional disposition to vomit, with oppression at the præcordia, which I suspect has been induced by cold drinks, imprudently given to him.

Prescribed an effervescing draught, with ten drops of the Liquor. Anod. Hoffmanni, every two hours, and the constant application of a stone bottle of hot water across the region of the stomach.

In the course of a few hours he was relieved, and confessed having drunk a tumbler of cold quass (a sourish beverage, prepared from rye-flour and ground malt), and that he had repeatedly been affected in a similar way, after inebriety or irregularity of diet, ever since a severe attack of the *atmospheric cholera*, or epidemic of the summer of 1831.

From this time to the evening of the 7th, I was unable, from indisposition, to attend him; and it was with regret I learnt that he had had a relapse on the night of the 3d, accompanied by singultus, which now was incessant, producing insomnium and extreme anxiety. Various antispasmodics,—as musk, castor, camphor dissolved in æther, tinct. opii, &c.—had been ineffectually tried. Having observed the good effect of a blister to the epigastrium, in assuaging obstinate hiccup, in a case of severe symptomatic fever after lithotomy, I ordered an oval one, of six inches in length by four in breadth, to be immediately applied, and the effervescing draught, with a small quantity of Hoffman's drops, to be renewed every two hours.

8th.—On visiting him this morning, I was delighted to find that the hiccup had gradually ceased, after the blister had lain on four hours, and was beginning to rise, and that he afterwards obtained some sleep. The urine, too—whether from a stimulus given to the bladder by the absorption of cantharides, —began towards the afternoon to flow in small quantities.

Allowed some warm port-wine negus twice a day.

9th. — The patient considerably reduced by the long-continued state of irritation. Prescribed a light tonic mixture of Infus. gentianæ c. Tr. card. comp.

10th. — Better. The catheter only passed late every evening, in order completely to evacuate the bladder, and afford him a better chance of sleep; gentle stimulating frictions to the abdomen night and morning; the central part of the blister to be kept open.

11th.—The bowels beginning to resume their functions naturally, and the urine continues to flow. A broad flannel bandage ordered to be constantly worn from the hypogastric regions to the hips, as well for the sake of warmth as to support the parietes of the abdomen. A light nourishing diet allowed.

14th.—The catheter omitted. From this date his convalescence was rapid.

August 1st.—Blister healed, and diet increased.

6th.—Feels well in all respects, and wishes to leave the hospital.

11th.—Dismissed, cured, and strictly enjoined to continue to wear the flannel bandage, and abstain from irregular habits.

CASE II.—*Compound Fracture of the Leg — Attack of Scurvy — Saline treatment—Recovery.*

Michael Timopheef, æt. 39, was placed under my care, at the General Naval Hospital of St. Petersburgh, on the 19th of June, 1828, with a compound fracture of the left leg, four inches above the ankle-joint, the consequence of a fall from a vessel building in the Great Admiralty Yard. The tibia was fractured obliquely, and projected half an inch. Reduction was speedily effected, and nothing worthy of remark occurred, but that the treatment proved tedious, owing to the irritable habit and restlessness of the patient. I have been accustomed, with a few exceptions, to employ the straight position, with junks, as formerly, at St. George's Hospital.

By the 15th October he was enabled to use crutches, the limb being supported by a roller and pasteboard splints.

On the 29th November he was dismissed, cured.

From this period I heard nothing of him till the 2d of April, 1833, when he was readmitted for considerable lameness of the left leg, and scurvy, produced by defective nourishment during the long fast of six weeks preceding Easter, and exposure to wet and cold during the thaw. The characteristic symptoms were—lividness and flaccidity of the countenance; ecchymoses; rigidity and contraction of the back of the legs and hams; extravasation under the tunicæ adnatæ, and in the cellular membrane beneath the palpebræ; the teeth nearly hidden by spongy and bleeding gums, with the most offensive breath; and so great was the dyscrasia sanguinis, that the body was covered with scorbutic petechiæ; skin rough and arid; urine scanty and high coloured; bowels usually costive—when evacuated, stools black and fœtid; pulse slow and feeble; moral depression very great. In this state of living decomposition, if the expression may be allowed, great is the number that, during the space of twenty-six years, have come under my observation. On examining the leg, I found that the old cicatrix had ulcerated in three or four places, and that the ends of the bones formerly fractured were slightly moveable on each other, but no crepitation was perceptible. After the usual ablution of a warm-bath, he was put on a light nourishing diet: beef soup at dinner and supper, with fresh vegetables, especially sorrel, of which vast quantities are cultivated in this neighbourhood; water cresses, green onions, horse-radish, cranberries, and lemons, were also liberally supplied. The whole body was ordered to be washed night and morning with tepid camphorated vinegar and warm fomentations of a strong decoction of aromatic herbs, acetum camphoratum, and a little acid. muriat. dilut. to be constantly applied to the hams, back of legs, and over the wound. The following anti-scorbutic mixture was prescribed.

℞ Extract. Turionum Pini Sylv.; Extract. Amari, aa ʒj.—solve in Infus. Calami. Aromat. ℥vj.; Succi. Baccar. Oxycocci, Spiritûs Frumenti, aa ℥iij.; M. Sumat æger. ℥ij. 4ta quaq horâ.

As an antiseptic gargle,

Decoct. Cinch. Peruv.; Mel. Rosarum; Acid. Muriat. dilut. and Tinct. Myrrhæ.

April 16th.—Health and spirits improved. The cicatrix has completely given way superficially, and the callus so loosened as to present to the feel what is termed an artificial joint; the use of junks and a foot-board being required to support and steady the foot.

May 6th.—Increase of diet allowed, with stronger lemonade, to which port wine is added. Absorption of the ecchymosed fluids proceeding rapidly; gums subsiding; breath far less offensive.

Detergent gargle to be continued.

24th.—Reunion of the bones commencing; wound in a healing state; bowels regular.

30th.—Much better. A quart of the hospital beer, containing the tips of the fir-pine and horse-radish infused, allowed daily, with half a pound of roast beef extra at dinner; and, to his great delight, I permitted him to eat sour-krout. It may not be here out of place to observe, that the allowance of salt to each patient on full diet is at the rate of ℥j. per diem, half of which is employed in the kitchen for seasoning their soup; a quantity well adapted to the taste of the Russian, who from his infancy is accustomed to every thing sour and salt, as cabbage, cucumbers, beet-root, and various kinds of mushrooms, salted for winter use. Salt-fish and herrings, and the little beef they consume during the greater part of the year, is usually salted. Their black rye-bread, of a sourish quality, is eaten sprinkled with salt, and the whole is washed down with quass. As a due admixture of animal and vegetable food (in northern climates at least) may be said to be the best preventative of scurvy, so here the too frequent want of it, with the numerous fasts; the immoderate use of votky, or distilled rye spirit; and the sedative effects of the long winters, strongly dispose to it; and, were it not for the salt and antiscorbutic nature of the diet of the lower classes, scurvy would no doubt be far more prevalent.

When Dr. Stevens was in St. Petersburgh the summer of last year, he visited the naval hospital, accompanied by the medical officers, and the patient in question was pointed out to him. I have now quitted the Russian service, in the hope of shortly returning to my native country, or I would not fail to give a fair trial to the saline treatment in scurvy, so strongly recommended to me by the doctor.

July 15th.—Continues to improve. Allowed full diet, with two quarts of beer daily. Reunion of the bones firmer.

August 10th.—Wound nearly healed.

15th.—Began to use crutches; paste-board splints over the roller.

September 7th.—Wound well cicatrized. The limb, though nearly an inch shorter than the other, owing to the state of the ham and flexor muscles, and to the disturbance consequent on the frequent fomentations of these parts, was sufficiently strong to enable him to hobble about, with the assistance of a high-heeled shoe. It may not be improbable that an excitement to ossification was partly induced by the friction of the bones on each other, though to the wonderful agency of the vis medicatrix naturæ in restoring energy to the system, the favourable result must be ascribed.

October 29th.—Dismissed cured, but unfitted for duty.

In the voyages of the early circumnavigators we read of the breaking open of the cicatrix of old wounds during the baneful prevalence of scurvy on board their ships. In the hospitals of St. Petersburgh and Cronstadt the same effects are of constant occurrence; but I am not aware that a case of disunion, and subsequent reunion, similar to the present, has yet been recorded.

On the 9th of December the subject of this case left the service, with the usual allowance; and, as I formed one of the committee appointed for the survey of those to be discharged or invalided, it gave me great pleasure to meet and prove useful to my friend Iwan Nikitin, on whom I operated for subclavian aneurism in January 1823, and whose case was published in the Medico-Chirurgical Transactions of that year. His arm remained perfectly restored, and he now presented himself for his discharge and pension, having completed the term required.

St. Petersburgh,
Sept. 7, 1834.

AQUEOUS DISCHARGE AFTER PARTURITION;

WITH THE MORBID APPEARANCES.

To the Editor of the Medical Gazette.

Sir,

The communication of Dr. Ashwell on "Aqueous Discharge after Parturition," in your number for September 6th, has interested me much; and the profession in general cannot but feel under obligation to him, as I do individually, for his valuable remarks and cases, and for having drawn attention to the subject. Having myself met with an instance of the kind some months ago, which then made a strong impression upon my mind (from the novel phenomenon of a *very* profuse watery discharge from the uterus),

I have perused Dr. A.'s paper with peculiar satisfaction and pleasure, and am induced to think a report of the case may at this time be acceptable to your readers.

As my patient unfortunately died, an opportunity was afforded me of performing a *post mortem* examination, whereby the history is rendered more complete than either of those furnished by Dr. Ashwell, and whence, perhaps, some idea of the nature of this singular affection may be formed.

Case.—In the month of March, 1833, I attended Mrs. ——, æt. 29, the wife of a respectable tradesman in this town, in labour with her fourth child. She had from her youth lived in the enjoyment of what might, in her, be well termed rude health, having, however, a goitre since the period of childhood, which had now attained a large size, and had increased in magnitude with each gestation, though a certain diminution took place after delivery; but within the last few months she had experienced a considerable impairment of her general health, to which her looks testified. She had become highly "nervous," lost a good deal of flesh, and the wonted colour had forsaken her cheeks; yet her chief complaint was of pain, and a sensation of heat in the situation of the left ovary, attended with tenderness under pressure.

The birth of the child was quite natural and expeditious, although there was a slight retention of the placenta, owing to a minute adhesion to the left side of the uterus, which required to be broken through by the introduction of the hand into this cavity. The operation was borne remarkably well, and at the termination of the first twenty-four hours she was as comfortable as any woman could be.

When beginning to act upon the bowels, I found that they had been grievously neglected during pregnancy. The doses of purgative medicine necessary were therefore unusually great, and the quantities of scybala, and dark and diseased fæces, brought away by them were inordinately large. This foul state of the bowels, as might be expected, gave rise to a severe form of intestinal irritation, accompanied by a rapid pulse of 120, violent palpitation of the heart, pain of head, &c. In short, the symptoms of this disorder, so well delineated by Dr. Marshall Hall, were here conspicuous. The lochia were natural for the first three days, after which no discharge appeared; and at no period could milk be procured in the breasts despite of all our best exertions.

Under the steady and long-continued use of purgatives, the above state of the alvine functions was at length rectified, her strength at the same time demanding the support of mild and bland nourishment, and some of the less powerful diffusible stimuli. In the space of a month her recovery might be pronounced good, though the pain continued in the left iliac region, together with a frequent pulse and unmitigated palpitation.

In April, 1834, my services, as her accoucheur, were again commanded, and in every respect the labour was natural and easy, excepting that there was a greater discharge of coagulated blood than usual, both attendant on and after the expulsion of the placenta.

Her symptoms had been incessantly and carefully watched by me from the earlier months of pregnancy, and even before she was pregnant; during the whole of which time she had suffered severely from the pain in the left side of the abdomen, as well as from palpitation of the heart, and the pulse was scarcely ever under 120. In the early months there was a strong disposition in the bowels to become again loaded, as during her former period of breeding, and constipation for only one day was invariably productive of aggravated sufferings: consequently, when under my advice, she took repeated doses of castor-oil and laxative electuary as often as they were required.

About the sixth month she went a few miles into the country, to the house of a relation; and whilst there, was bled by a respectable practitioner of a neighbouring town for the relief of the pain in the left iliac fossa. Some alleviation followed the loss of blood for a few days, and she was advised to lose more if the pain recurred. Nearly a month afterwards, at her own request, I abstracted a few ounces of blood from her arm, as the pain was then as severe as ever. On account of the pallid aspect of the countenance and prolabia, I was adverse to depleting at all; and the escape of the above small quantity admonished me not to proceed. She

fancied herself, however, somewhat easier after this scanty venesection.

A tendency to swelling had for some weeks been perceptible in the lower extremities, and in the face also there were manifest some signs of general effusion; in fact, the *aspect* of the patient was *anasarcous*. And in this critical situation strong fears were naturally excited in my mind as to her recovery after parturition.

The first four days subsequent to her delivery passed over tolerably well, and on the fifth some milk was secreted in the mammæ. Up to this day the lochial discharge had been flowing constantly, though sparingly; but now it ceased, and there occurred the very remarkable phenomenon of successive copious discharges of a clear watery fluid from the uterine cavity, at intervals of about twelve hours. The quantity passed at each time was estimated at two pints, and its accumulation within the uterus occasioned much uneasiness, from distention previous to its expulsion, which was generally unattended with pain. It was perfectly inodorous, and the napkins were no more stained than if they had been immersed in fresh spring water. For the space of six days this singular evacuation lasted, and at the expiration of this time, when it terminated rather abruptly, my patient had both rapidly and greatly lost ground, and was further irremediably declining in strength. The milk remained in the breasts only one day. A fatal exhaustion was too plainly approaching; the pain in the left ilium and the unnatural action of the heart persisted, though with less violence, proportionate to the diminished powers of life. Delirium came on three days before her death, which concluded the scene on the seventeenth day after her confinement.

Sectio cadaveris.—All the viscera of the thorax and abdomen were healthy except the uterus and left ovary. The internal surface of the uterus presented three elevated masses, having both a *fungoid* and *melanotic* appearance, more resembling what has been designated the "cauliflower excrescence" than any other morbid or disorganized production to which I could compare them. The largest of these elevations was about equal in size to a penny piece; the two others were probably half as large. Their surface was covered with a thin layer of dark half-coagulated blood; the adventitious substances were intimately adherent to the lining membrane, so that they were immoveable by the finger or handle of the scalpel.

In the left ovarium there was nearly half an ounce of pure pus, and the organ itself was surrounded by some adhesions formed by coagulable lymph.

It was unfortunately out of my power to bring away the morbid parts, which would have admitted of being fully shewn in a drawing.

The remarks I have to offer on the foregoing case are very few, as I look upon those of Dr. Ashwell peculiarly pertinent, and explanatory of the general nature of the subject. It were needless to relate the various means employed in the medical treatment, since the detail would be foreign to the object of my present letter. Suffice it to say, that no remedy was omitted that held out the hope of relieving such formidable symptoms, and that nought but a short palliation of them was procured.

Like Dr. Ashwell, I had looked in vain for an account of this singular malady in the best obstetric authors within my reach; and yet I cannot but imagine that it has fallen under the observation of other practitioners. Now that it has been brought before the notice of the profession, it is very probable that instances of the kind will be remembered by others, and that in future it will be readily recognized.

From the actual state of parts found after death, I cannot agree with Dr. A. in regarding the aqueous discharge as the product of *disordered function* merely in the mucous membrane of the uterus. Whatever might have been the cause of it in the cases he has just favoured us with, I have no doubt in my own mind but that, in the case which forms the subject of this communication, it proceeded from those foreign growths discovered attached to that structure, as it is well known very profuse limpid secretions are very general concomitants of such analogous excrescences.—I beg to subscribe myself, sir,

Your very obedient servant,

G. Bury.

Farnham, Sept. 27, 1834.

ON THE CURE OF POLYPI IN THE MEATUS AUDITORIUS EXTERNUS,

With Sulphate of Zinc.

To the Editor of the Medical Gazette.

SIR,

I OBSERVED in your number of Saturday last a letter from my friend and colleague, Mr. A. C. Hutchison, on the successful employment of a strong solution of sulphate of zinc in the treatment of nasal polypi; and beg leave to add, that since he kindly informed me of Mr. J. Dallaway's using it, I have had at least six cases in which it has been the means of cure. In the first three or four cases it was the sole treatment. I believe one of them, in a youth of 14, to have been an example of the severer form of the complaint, the polypi completely filling the anterior nares, and apparently extending to the antrum, and toward the forehead. At first I directed a solution (℥j. ad f. ℥j.) to be injected upon the polypi, until it occasionally entered the throat. As soon as he could in any degree sniff the liquid, I prescribed, as in all my cases, that he should do so, lowering the solution to ℥ss. ad f. ℥j., and cautioning him, that if he swallowed much of it he would be very sick. To the best of my recollection the boy got well in about three months. In those examples which have more recently presented themselves to my treatment, I have not scrupled to use the polypus forceps in the first instance, where they might readily be applied with advantage to any portion of the diseased structure. This I have done merely to save time, and not from any diminished confidence in the efficacy of Mr. Joseph Dallaway's remedy. I have never found any evil result from its being sniffed up the nose.

The polypi which are commonly found in the nares are spheroidal hollow bags attached to the Schneiderian membrane, or to each other, by comparatively narrow necks. I have certainly seen them contract and relax again, more than once (I think I may safely say three times), after their removal to a basin of water. But I am jealous of attributing to them, on that ground, an independent life. We have much fuller evidence that *hydatids* are distinct animals, and yet the mind hesitates to allow it.

I never saw a polypus in the meatus auditorius externus analogous to those of the nose. The former, from all my experience, are not hollow. Although they are spheroidal, and *shrink* when torn from their attachments, they do not exhibit the slightest appearance of active movement. They generally spring from a very small orifice in the cutis, or it may be in the cartilage of the tube, and consist of a very loose spongy texture, full of blood and serum, and invested with the same delicate covering which all granulating sores exhibit. I believe them to be nothing else but "*proud flesh.*" The granulation is, indeed, unusually exuberant, so as to form a very narrow-necked fungus; but we have all seen fungi on other parts precisely analogous, and which may be described as the same thing with a polypus of the meatus, excepting only in their magnitude and situation. A minute portion being extirpated from the middle of the toe-nail in scraping or paring it, leaves a wound surrounded with pressure, which, if neglected, will shoot up exactly such a fungus as in the ear would be called a polypus. However, the strong solution of sulphate of zinc is equally beneficial for what is called polypus in the ear, as for that in the nose. I have tried it in abundance of instances, and have generally found ℈j. ad f. ℥j. sufficient. I need not trouble you at present with more than a simple statement of the fact, but should rather apologize for this intrusion on your columns, as I hope shortly to detail some of the cases in a work with which I have been many years engaged, upon Diseases of the Ear, and which, if my other engagements allow, will appear shortly.—I am, sir,

Your obedient servant,

THOS. CHEVALIER,
Consulting Surgeon to the Westminster General Dispensary.

62, Torrington-Square,
Oct 6, 1834.

CHRONIC RHEUMATISM

SUCCESSFULLY TREATED BY TARTAR EMETIC.

To the Editor of the Medical Gazette.

SIR,

IN submitting to the notice of the profession the following case of chronic

rheumatism, successfully treated by tartar emetic ointment, there is, I am aware, little new in principle; but the length of time which it had baffled every system of treatment may render it not altogether devoid of interest.

In the spring of 1828 I was applied to by a gentleman of high military rank, labouring under rheumatism, which he said first attacked him during his campaign in the Peninsula, but which, for the last ten years, became so distressing as to deprive him of the use of one or other extremity for the greater part of every year.

I collected from him the following facts:—

In 1818 he retired to the country, being much attached to field sports. The attacks became so severe during the ensuing winter, that he was confined to his bed for two months. Each succeeding winter was attended by one of those tedious fits, which never left him until the spring was far advanced. Being now no longer able to enjoy his favourite amusements, he broke up his establishment, and came to reside near London for additional advice. I saw him there in company with his medical attendant, a general practitioner of some eminence. From him I learned that there was nothing that science or experience could suggest that had not already been employed. Under this impression I proposed a consultation, at which some of the ordinary medicines were prescribed, but with no better success. To this succeeded another and another, with similar results.

In the summer of 1830 his general health became so bad, that it was deemed advisable to suspend all medicines; and with this view he was sent to Buxton to try the effect of the waters. He drank them under advice, but found no relief. He returned home early in October, resolved to submit to patience and flannel. His general health was much improved, though the arm and hip, the parts generally affected, were still very painful. The employment of colchicum and other internal remedies had disturbed his digestion so much, previous to his leaving for Buxton, that nothing could induce him to resort again to internal remedies. For three months he pursued a system of negative medication, waiting patiently for the results of the Buxton waters. The tartar emetic ointment was now applied for the first time. Why it should have been neglected so long, I cannot account for: its effects were very surprising. The moment the pustules appeared, the pain began to subside, which, as they maturated, completely left him. Two or three successive crops of pustules were kept up, in consequence of the pains occasionally returning; but at the expiration of about a month from the first application of the ointment, and four from his visit to Buxton, he was free from all pain—a feeling which he had hardly enjoyed since 1818. His strength and general health rapidly increased, and in the ensuing year (1831) he found himself so perfectly restored that he again broke up his establishment near town, and retired to the country to pursue his favourite sports, of which he was passionately fond. Since that time, he has had many incipient attacks, which he invariably removes by the application of tartar emetic ointment. What is singular, is, that for the last three years he has not been confined, by rheumatism, to his house for twenty-four hours, though, for the ten previous years, he was, upon an average, confined five months every year. Some questions of pathological importance present themselves here, but pending the experimental inquiries of the two eminent French professors, Chomel and Bouillaud, upon the nature and seat of this disease, I shall confine myself to facts, without dwelling more particularly on the mode of treatment; which was such as is generally advised in such cases. Many, doubtless, will object to facts of this nature, as inclining too much to the humoral doctrine; to such I can only say, that there are few whose practice is not influenced by that doctrine, unless they are reduced to the happy condition of the man in Moliere, who was speaking prose for forty years of his life without knowing it.

I am, sir,
Your obedient servant,
RICHARD BURKE, M.D.

4, Bolton-Row, Oct. 1, 1834.

P. S.—The general details of this case, with a few others, shall appear in another form.

ANALYSES AND NOTICES OF BOOKS.

" L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

SOMNAMBULISM. *The extraordinary Case of Jane C. Rider, the Springfield Somnambulist; being the substance of a Lecture delivered before the Springfield Lyceum.* By L. W. BELDEN, M.D.

A FEW months ago we gave a short notice of this girl's case, picked up from the American journals: the publication of Dr. Belden's lecture—re-published here in a cheap form—renders it unnecessary to glean or compile further on the subject. Those who are curious about the phenomena of mind, as influenced by bodily infirmity, will be glad to peruse this little work. It details some very remarkable examples of the acuteness of over-excited organs, particularly with how minute a portion of light the retina can perform its functions. The term *somnambulism* but ill expresses the collection of facts detailed in the lecture, *walking in her sleep* being, in truth, only the prelude to Miss Rider's extraordinary performance.

Nouveaux Elémens de Chimie theorique et pratique, à l'usage des Etablissemens de l'Université. Par R. T. GUERIN-DE-VARRY, Docteur ès Sciences, &c. Bruxelles.

THIS is the neatest abstract of elementary chemistry we have yet seen. The author, a disciple of M. Chevreul, of Paris, to whom he dedicates the work, teaches clearly and concisely a number of useful things, which we should in vain seek in performances of more cost and pretension. From Dumas and Berzelius he has selected much important matter, which he presents to us in a popular form. His preliminary notions on physics, as connected with chemistry, are well drawn up; and we particularly admire the brevity and perspicuousness with which he states the doctrines of equivalents and atoms, giving the modern notation of the latter, as invented by Berzelius, and followed by most of the foreign authorities. The distinction of the simple bodies into metalloids and metals is also here adopted; and we can strongly recommend to the student many of the practical hints which he will find scattered through these volumes.

OSSA HUMANA: *consisting of numerous highly-finished Lithographic Drawings, on fine imperial folio paper, with copious References in Letter-press.* By R. B CUMMING, Pupil of St. George's Hospital.

THE title of this performance is so amply set forth by the author, that it leaves nothing for us to describe. We may say, however, that it is correctly as well as copiously announced. The lithographic impressions are all that can be desired. The bones are represented in whole and in part, of the natural size, accurately drawn from nature. The press, we are glad to see, teems with illustrative works just now for the use of the anatomical student, among which we certainly know of none possessed of more merit than Quain's plates of the muscles, and Cumming's drawings of the bones; the latter, however, are complete,—the last of the four fasciculi of which the Ossa Humana consisted being recently published.

MEDICAL GAZETTE.

Saturday, Oct. 11, 1834.

" Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri: potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

PORTUGUESE MEDICINE.

A ROYAL *POST-MORTEM*.

WERE we to take the account of the morbid appearances found in Don Pedro's body as a specimen of the state of medical science in Portugal, we should perhaps be thought to imitate Cobbett pulling a King's speech to pieces, and pretending to seek in it "a well of English undefiled." But although we can make every allowance for documents of this sort, drawn up with court formality, ill adapted to display the qualities which a hyper-

criticism might demand; yet are we obliged to confess that this Portuguese "autopsy," by authority, is really a very poor affair.

Cutting off the head and tail pieces, which constitute the principal bulk of the report,—though containing merely the titles of the deceased and of his *post-mortem* examiners, the whole of the matter is comprised in the following:—

"Abdominal cavity. — No fluid. Omentum and peritoneum *rather too pale*, appearing to be *thickened by effusion of bile*.

"Gastric mucous [membrane?], the colour changed in the posterior part towards the spleen.

"Hypertrophy of the great lobe of the liver, and the same altered in colour, being too dark.

"Spleen become very soft, approaching to a state of solution.

"Thoracic cavity. — Hydro-thorax of the right pleuritic sac, containing 2½lb. of turbid and sanguineous fluid.

"No fluid in the left pleura, but a very extensive adhesion of the pulmonary pleura to the costal, and alteration of colour, it being *much too dark*.

"Left *lung* adhering very extensively to the *costal* pleura, of a livid colour, and friable; no crepitation on being cut, and almost without any vesicular appearance throughout the whole; merely a small portion of the superior part was permeable to the air, and that portion swam though the whole sank.

"Heart a little larger than the regular size, flaccid and discoloured, with some adhesion to *the posterior part*. The valves being examined, were found in the natural state. Further examination prevented by the necessity of preserving the heart entire.

"Kidneys altered, inclining to white, as also in the cortical substance, which was in a soft state. A calculus was found in the left kidney. In the bladder no alteration."

We have marked a few phrases and epithets, on which we have an observation or two to make. Of the production generally, we must repeat, that nothing of the kind can well be more meagre. We are not informed how many hours elapsed before the examination was made. The date of the document, it is true, is the 25th September, the day after the royal patient's death; but, for aught we can learn, the autopsy might have taken place any time between twelve and thirty hours after. Nor is there a word said touching the external appearances of the body: no note is taken of the outward marks of the illness which produced death. It is not even mentioned whether there was anasarca of the extremities, or of the trunk—no unusual circumstance when the chest is in the condition here described.

The head, it would seem, was not examined: doubtless the physicians thought it unnecessary, as the intellectual faculties of the Ex-Emperor were unimpaired to the last. But, in an examination of this kind, made by authority, we think the omission rather inexcusable: it could have given very little additional trouble, and would have been more satisfactory to all parties.

In what we are told relative to the cavities examined, there are some things particularly deserving of notice. The omentum and peritoneum, it seems, were *rather too pale;* and no attempt is made to assign any probable cause of the phenomenon. Presuming that the words are correctly rendered, we only gather from this that the serous membranes of the abdomen were unnaturally pallid; but how can this accord with what follows—that those very membranes appeared to be "thickened by effusion of bile?" If *bile* had made its way into any portion of their texture, it is difficult to conceive how they should have been, at the same time, "rather too pale."

Concerning the stomach, we only learn one fact—that there was some discolouration of the mucous membrane in that part adjoining the spleen; the

latter viscus, as we are further informed, being almost in a state of decomposition.

The account of the lungs is dispatched with almost equal brevity; though here being the seat of the disease, a little more detail might have been expected. The abdominal cavity might, perhaps, be disposed of in a few words; but the chest, as containing the cause of death, one would think deserved a little closer inspection. We are not vouchsafed a single word respecting the right lung, any more than if no such organ ever existed. Where such a marked distinction was observable in the pleuritic cavities—one containing 2½ lbs. of fluid, and the other none, it would have been at least satisfactory to learn in what state was the lung which was bathed in so much serous effusion; especially as such morbid appearances were noticed in the left lung, which seemed to be all disorganized, with the exception of a small part in its upper lobe.

Neither are the tidings of the heart more satisfactory: in the present day, when the morbid anatomy of that organ is so well understood (is it not so in Portugal?), what can we infer from being merely told that the heart was somewhat enlarged?—neither knowing whether there was hypertrophy or dilatation, if, indeed, there was any organic lesion about the parts. What is said of the adhesion of the heart is scarcely intelligible; perhaps the *pericardium* is understood, though not expressed: we should moreover expect to be told whether there was any effusion in the latter sac or not.

Altogether we must say that this *post-mortem* report, though signed by Don Joao Fernandes Tavares, first physician of the Royal Chamber, and by sundry surgeons, and other medical men of the Portuguese Court, with high-sounding titles, is not a very favourable exhibition of the state of pathological science in Portugal.

But if it be faulty as a mere report of morbid appearances, how must we qualify it when viewed in the light of a medico-legal document, concerning a royal personage?—for such it must be considered. The Duke of Braganza, it was rumoured, had fallen a victim to slow poison. No matter how vague or how absurd the rumour might be—and, indeed, it seldom happens that an exalted personage goes down into the tomb without giving rise to some suspicion of foul play—according to the poet's shrewd remark,

> Ad generum Cereris sine cæde et vulnere pauci
> Descendunt reges, et sicca morte tyranni;—

however vague, we say, the suspicions might be in the present case, it surely behoved the medical attendants to give so minute and clear an account of what they were commissioned to observe, as to leave no room for any surmise.

What has been said in Lisbon, and repeated by a silly portion of the London press, respecting the cause of Don Pedro's death, is sufficiently ridiculous; it only claims our notice as confirming what we said last week of the manner in which all questions connected with science are dealt with by some of our daily contemporaries. The story alluded to is, that Don Pedro had been taken off by mixing poison in the water in which eggs for the royal table were boiled—some six months ago!

That such notions should still be formed touching the action of poisons—supposed to be secretly and mysteriously administered, brings us back full half a century in the history of medicine. We thought few educated persons were uninformed of the achievements effected of late years in chemical science with regard to this subject. But knowledge is certainly not *diffused*, nor does intellect *march* quite so rapidly as some philosophers suppose: the old leaven is hard to be worked off; and Dr. Christison perhaps takes too much for granted when he

says, that "partly on account of the improvement in general knowledge, and chiefly in consequence of the subtilty and precision which the refinements of modern physic and chemistry have introduced into medico-legal inquiries, it is rare that the suspicious scrutiny of the world now recognises in the accounts of the last illness of popes and princes, the effects of poison insidiously introduced into the body." "No one now seriously believes," says the same learned authority, "that Henry the Sixth was killed by a pair of poisoned gloves, or Pope Clement the Seventh by a poisoned torch carried before him in a procession, or Hercules by a poisoned robe, or that the operation of poisons can be so predetermined as to commence or prove fatal on a fixed day, and after the lapse of a definite and remote interval." Yet, what is too gross for the credulity of an age which holds out such encouragement for quackery? Time was when it was thought possible for a great personage to be carried off by the slow agency of a poisoned wig, a pinch of snuff, a medicated saddle, a perfumed *billet doux*, and the like: it remained for the present enlightened period to reverse the old adage—

Ova atque nuces *tuto* gustes;

and to give credence to an absurdity more rank than was ever heard of.

But let us hope that the "autopsy by authority," bad as it is, may tend, in some measure, to allay the inquietude of our good easy friends. A course of poisoned eggs would hardly have allowed the Emperor-Duke to escape so easily, and something more would have been visible in the stomach besides a discolouration such as that above described. And be it permitted us to add—whether our word be taken for it or not—that not all the poisons that Locusta or Toffana ever knew could have produced such a mass of chest disease as that through which Don Pedro died.

ST. GEORGE'S AND THE LANCET.

The personal motives by which the Editor of the Lancet is influenced in his abuse of St. George's Hospital, are well known to all the medical world, and render any formal refutation of his absurd calumnies unnecessary. That he should be betrayed by his temper into a public display of the extent to which he suffers, is certainly not quite consistent with the cunning and worldly wisdom which he usually evinces; but we suppose there are some vexations which it is beyond human endurance to bear. With reference to the last ebullition of his rancour, we have received the following note—which, however, we trust will not lead to others of a similar nature, as the circumstances are too notorious to require any interference or explanation.

To the Editor of the Medical Gazette.

Sir,

It is stated in the last number of the Lancet, that all the medical officers attend, and that all the business is done here, at the same hour—viz. one o'clock. This is not the fact: every accommodation is afforded the pupils which the limited time intervening between lectures (viz. from half-past twelve till half-past two) permits. It is also said that no notice is given of post-mortem examinations!—whereas a card is always put up in the morning, and a bell rung before the autopsy begins. Further, at the end of the last Spring courses, the hours of visiting were arranged as follows:—Dr. Seymour, Tuesday, Thursday, and Saturday, at half-past 12; Dr. Macleod, Monday, Wednesday, and Friday, at a quarter before 12; and Dr. Wilson, same days, at one o'clock. Dr. Chambers was at that time prevented from attending by illness. Now this notice was put up in the hall and pupils' room, and remained there for many weeks.

I cannot conclude without adding, that the misrepresentations in the Lancet are so very gross, that I fear they are not unintentional.—I am, sir,

Your obedient servant,

A Physician's Pupil.

St. George's Hospital, Oct. 6, 1834.

We have ascertained the correctness of the above, and, on second thoughts, would advise that if any of those concerned wish to stop Mr. Wakley's mouth, they should enclose him a "consideration," and promise *in future* to advertise their school on the wrapper of the Lancet.

CLINICAL LECTURES
ON
TYPHOID FEVER.

Delivered at the Hôtel Dieu, Paris,

By Professor Chomel.

Causes—Effects of Cold—of certain Periods of Life—of Residence in Cities.—Doctrine of Contagion—Opinions of various French and English Physicians.

The causes of typhoid fever are enveloped in great obscurity. We know well some of the circumstances which predispose to it, but the exciting cause—that by the action of which it is immediately produced—escapes all our investigation. This obscurity as to the exciting cause is not peculiar to typhoid fever; it also exists in respect to most other internal maladies; and, indeed, we in general adopt with too much confidence the set of causes to which diseases are attributed, and which are almost always the same for affections the most different. If we take, for example, inflammation of the lungs, one of the diseases in all respects best known, we find a great degree of obscurity in the causes which produce it. The only thing which we know with certainty respecting the etiology of pneumonia, is that it is most frequent in cold seasons; beyond that all is hypothesis. Every day it is attributed to the direct action of cold upon the frame; but the same circumstance is far from always producing the same effect. A thousand times has the same individual, who to-day is attacked with pneumonia from cold, been exposed to greater cold in similar circumstances, and yet this same cause has never before produced such an effect. In the same way it is in vain we seek, in most cases, for the cause which has produced erysipelas, or pleurisy, or peritonitis. We see very well some of the conditions under the influence of which the disease supervenes, but those which actually produce it constantly escape us;—in this respect typhoid fever ought not to be separated from most diseases called internal. There is, however, this difference between typhoid fever and some of the inflammations above mentioned, inasmuch as the latter may be artificially produced, by injecting irritating substances into the cavities. But in the present state of our knowledge, we cannot at will produce that alteration in the glands of Peyer which we see in typhoid fever. One exciting cause is alone admitted by some, namely, contagion; but this is generally denied; and as the mode of transmission, supposing contagion to exist, always escapes us, and as the obscurity which hangs over the first exciting cause is the same whether we admit or deny contagion, we are not less in ignorance of the nature of this cause, and of its mode of action.

The predisposing causes of typhoid fever have been the object of particular research, and have led to tolerably positive results. Too often, however, we have been guided, in seeking for the causes, by theory rather than observation; the nature of the disease has generally been first determined, and a knowledge of the causes subsequently obtained; whence it has followed that the causes acknowledged to have produced the disease have been influenced by the ideas which we had previously adopted respecting the nature of the disease itself. Thus, those who attributed all these fevers to a putrescent alteration of the fluids, necessarily admitted as causes every thing which produced debility, or which favoured putridity: poverty, abundant hæmorrhages, fatigue, mental distress, acting upon those who inhabited badly-aired localities, prisons, barracks, hospitals, &c. But a still more curious fact connected with the natural direction of the mind, and which shows well the influence of theory, is the error into which those have fallen who have considered persons advanced in life as more disposed than the young to typhoid fever; although it is well made out that we never meet with it in old persons. Such pathologists, regarding fever as produced by weakness, concluded, *à priori*, that it was most frequent amongst the aged. On the other hand, the physiologists, setting off with the idea that all febrile diseases were inflammations of the alimentary canal, have necessarily considered every thing which irritated the stomach and bowels as among the causes of fever. The following table, taken from 115 instances of typhoid fever, in which the intelligence of the patients enabled exact information to be obtained respecting the causes to which the disease was to be attributed, goes to show how erroneous the ideas are which are generally admitted regarding the etiology of this disease.

5	attributed their complaint to cold applied when they were very warm.
5	to the absence or bad quality of nourishment.
4	to depressing moral affections.
5	to the debility produced by preceding diseases.
3	to the action of purgative medicine.
1	to excess in spirituous liquors.
5	to excessive fatigue.
2	to violent physical "commotion."
1	to exposure to the sun.
5	related circumstances favourable to contagion.
79	could assign no appreciable cause.
115	

Thus scarcely one-fourth attributed the disease to any cause of the least energy. One cannot but be struck, too, with the small number in which the disease could be attributed to circumstances connected with the alimentary canal; and even with regard to this, it is probable that the indisposition for which they took the purgatives was in reality the commencement of the typhoid fever. If we compare the above with the cases of pneumonia observed in a number nearly equal, and which occurred at the same time, we shall have another proof of the little influence of circumstances which are considered of importance in the etiology of internal diseases.

Of 137 cases of inflammation of the lungs,

28 attributed the attack to the influence of cold.
24 to the consequences of catarrh.
6 to violent labour without cold.
4 to the abuse of spirituous liquors.
3 to the influence of amenorrhœa.
1 to the puerperal state.
1 to the consequence of bruises.
68 could assign no cause.

A comparison of this table with the preceding will exhibit some interesting points in the etiology of fever. First, we may remark how few, comparatively to the general opinion, is the number of cases in which pneumonia is attributable to the action of cold, and how considerable, on the contrary, those in which the real exciting cause was not apparent. However, it is difficult, even from this table, to refuse to acknowledge, in the etiology of pneumonia, the action of some occasional causes which are not found in typhoid affections. Thus the number 28, pointing out those attributing their pneumonia to the action of cold applied when they were hot, is too great to be considered as accidental; and we cannot doubt that the cold had really an influence in producing the disease. We do not find among the cases of typhus any thing which can warrant us in drawing the same inference. There is evidently something in the etiology of typhoid fever which we do not find in that of any of the inflammations among which it has been attempted to class it; for the same results would have been obtained had we compared it with peritonitis, or any other of the phlegmasia.

Besides the differences just alluded to, there are some conditions in which the typhoid affection is developed, and which are peculiar to this disease. The study of these conditions is one of the most important, and at the same time most positive, in the etiology of the disease. I shall speak of these in succession, beginning with the age at which the disease is developed. In 117 patients—

8 were from 15 to 18 years of age.
25 ..... 18 .. 20
36 ..... 20 .. 25
30 ..... 25 .. 30
9 ..... 30 .. 35
3 ..... 35 .. 40
5 ..... 40 .. 50
1 ..... 0 .. 52

If we compare this table with the results obtained by M. Louis and others, we shall perceive that the most frequent period of attack is from 18 to 30; that it is rarely seen above 40; and that, perhaps, no case has been met with where the patient was above 25. It is therefore at that period of life during which the strength is most developed, that typhoid fever is most frequent. It is in vain that we endeavour to explain the cause of this, which we are no more able to discover than why measles, small pox, and scarlatina, make their attacks principally in infancy.

Another condition which modifies the development of typhoid fever is residence in a large city. The number of patients whom we receive with this disease into the hospitals are such as have been a short time in Paris. The following table shows the influence of this circumstance in 92 patients.

5 had resided in Paris somewhat less than a month.
10 ..... from 1 to 3 months.
9 ..... from 3 to 6 months.
21 ..... from 6 months to a year.
19 ..... from 1 year to 2.
15 ..... from 2 to 6.
11 ..... upwards of 7 years.
2 had been born in Paris.

92

It appears from this table that more than two-thirds had been in Paris for less than two years; but while the influence of acclimatization is thus demonstrated, we cannot, in the present state of our knowledge, offer any positive explanation of it.

Those who regard typhus as contagious easily explain, according to their opinion, why persons coming from the country, where the disease does not prevail, become more liable to it in large cities, where it is always to be found. This leads us to one of the most important questions in the etiology of the disease, namely, its transmission from one person to another. Some—and in France at least they constitute the majority—reject contagion altogether; but as here we ought rather to weigh the reasons than count the numbers, and as, besides, the

doctrine of contagion has many partizans in other countries, we shall examine the arguments on both sides. We shall commence with those which the non-contagionists cite in favour of their doctrine.

1. We see every day persons nurse patients labouring under typhus, and who nevertheless escape, although many of them are evidently placed under the most favourable circumstances for contracting the disease.

2. There is not a single bed in the hospital in which some individual affected with typhus has not lain, and it is uncommon not to have several cases of the disease in each ward; notwithstanding which we do not see that the patients adjacent to them—that those who assist them, or even who sleep on the same mattress, and cover themselves with the same bed-clothes, become affected with the fever.

3. Sometimes, indeed, we see an individual received into the hospital for some other disease, become affected with typhus; but these cases are so exceedingly rare, that only one or two such have been observed in the course of many years, either at the Hôtel Dieu or La Charité; and they certainly shew nothing in favour of contagion, because it cannot be supposed that individuals admitted into hospitals are beyond the reach of the causes which produce the disease. It must be confessed, however, that it is only from observations made in great cities, as in Paris, that the proofs (proofs, by the way, which are but negative) are derived; and it is not in such a field that the question can be determined. M. Bretonneau, who was the first in France to call the attention of practitioners to the contagion of this disease, has made numerous valuable observations on its transmission in villages and small towns. He was able to follow it, step by step, as it passed from one locality to another, and saw it communicated from an affected family, not to those who were nearest, but to those who had the most frequent and intimate connexion with the sick; and in this view of the case he is supported by several practitioners of the highest respectability.

We may add to these facts, which have been collected in Paris, or other parts of France, those accumulated by the English physicians: and first, it would appear that examples of transmission of typhus are as rare in the London hospitals as in those of Paris; and Dr. Elliotson, who admits the contagion of the disease, and who has been long one of the physicians to St. Thomas's, affirms, in the *London Medical Gazette* (vol. x. p. 146), that he has never observed in the hospital a single instance of contagion. It is different, however, in the Fever Hospital; as we find by the report of Dr. Tweedie; who states, that since its foundation, in 1802, all the physicians, with one exception, (that of Dr. Bateman,) have been attacked with fever, and that three out of eight have died with it. He adds, that all the resident officers—whether medical, matrons, nurses, porters, washerwomen, and other domestics—have, without exception, been attacked with the fever. This would seem to prove that the disease may be communicated by the linen which patients have used; for the washerwomen do not require to enter the wards. The adversaries of contagion, who cannot deny these facts, endeavour to explain them by the situation of the hospital; to which it is answered, by Dr. Tweedie, that nothing similar occurs in the Small-pox Hospital, which is close by it.

But it is not at the Fever Hospital of London alone that facts favourable to contagion have been observed. In 1817, the increase of fever in Edinburgh induced the government to open an hospital destined for fever patients. Queensbury House, a building in a healthy situation, and in the neighbourhood of which there were but few cases of the disease, was chosen for the purpose; nevertheless, all the resident pupils, and all the nurses, were successively attacked with the fever. This hospital having been shut up, was not again re-opened until 1826, when the resident physician, the apothecary, several servants, and all the nurses, with the exception of two, took the fever. During the same epidemic, six pupils and twenty-five nurses took the disease in the Royal Infirmery of the same town. At the Fever Hospital in Dublin, where also the distemper raged, fifty-two nurses out of fifty-seven suffered from it. We also find, in the memoir of Dr. Marsh, numerous facts in support of contagion; among which there are twenty-two instances which it is difficult to get over. Among these last are seven medical men, including the author of the memoir. These facts, borrowed from the English physicians, would be still more valuable if it was demonstrated that the disease to which they relate was exactly the same as that which we have been occupied in considering, and that the affection which the English denote generally under the name of *fever*, did not on some occasions assume the charaeters which belong to *camp* fever: and, indeed, another point which favours the doctrine of contagion, is the analogy which exists between the *typhoid* affection, and the *typhus* which prevails in camps; the contagious nature of which no one doubts.

I have thus presented with the utmost impartiality all the arguments for and

against contagion in typhoid fever, and the following are the conclusions at which I have arrived. 1st. The opinion adopted by the greater part of French physicians, that typhoid fever is not contagious, cannot be regarded as demonstrated. 2dly. If this disease be contagious, it only is so in a small degree, and requiring the concurrence of circumstances as yet but ill ascertained. 3dly. If further observation shall demonstrate, in typhus, the same anatomical lesions which are met with in typhoid fever, the identity of the two affections would be placed beyond a doubt, and the question of contagion set at rest.

The present state of our knowledge on this question does not admit of our entering upon the consideration of certain points connected with the doctrine of contagion. Thus I shall not stop to inquire into the mode of transmission of typhus fever, or into the circumstances which favour it. These questions, which would be of great interest if contagion were demonstrated, are not worth discussing till this uncertainty be removed.

CASES OF PARALYSIS OF INDIVIDUAL NERVES OF THE FACE.

By Dr. Christison.

Case I.—*Palsy of the Third Nerve or Motor Oculi—Recovery under free Venesection and Mercurial Salivation.*

A stout blacksmith, of middle age, and much given to drinking, was admitted into the Fever-hospital, supposed to labour under continued fever. During the confusion incident upon opening the hospital, and receiving a great number of patients before the appointment of a physician, the exact nature of his case was for some days overlooked; but a day or two after my appointment, my attention was called by Dr. W. Reid, then superintendent of the hospital, to a considerable squint of the left eye; upon which the following account was given by the patient.

Three weeks before his admission into the hospital, and immediately after a debauch, he first remarked that he saw double; and at the same time he was affected with ringing in the ears, headache, and giddiness, which last symptom was particularly troublesome when he kept his left eye open. After a fortnight he had rigors, general soreness, and increase of headache; and for ten days after admission into the fever-hospital, he had the symptoms of a mild attack of general fever, with continuance of double vision. Subsequently the two images gradually approached one another, till at length they coincided, and he saw single; and at the same time the general fever ceased. When first carefully examined, a few days after that, it was observed that the left eye-ball was turned very much outwards; that he had no power whatever to turn it upwards, inwards, or downwards; that when desired to look up, he merely rotated the eye-ball on its horizontal axis inwards; and that the upper eye-lid always hung over the ball, so as to be in contact with the lower, except when he was told to raise it, upon which he uncovered half only of the pupil. The pupils were equal in size, and contractile; and when he closed either eye, he saw quite well with the other. The vision with both eyes was not double. He had frequent diffuse headache, but no disorder in any other function.

For some days after this examination, the state of the affected eye varied, as he occasionally recovered imperfectly the movements of the eye-ball for twenty-four hours at a time; but at length they were lost entirely. The treatment for ten days after the paralytic affection was remarked consisted in the occasional application of leeches to the temple, and of a blister issue behind the ears, together with frequent laxatives. No amendment, however, was procured from these measures.

Four or five days later, when he had been three weeks in the hospital, his headache began gradually to increase, and the pulse to rise; in a day or two more he complained of great general soreness of the head, and of shooting pains, numbness, and diminution of muscular power in both limbs. Blood was therefore drawn from the arm, to the amount of two pounds. It was very buffy, and gave immediate relief from the headache. Calomel was also prescribed, in the dose of five grains four times a-day, with a little opium, for the purpose of quickly affecting the mouth. When this had been continued four days, the affection of the limbs ceased, and the fever abated considerably; but a slight deviation was remarked in the tongue, to the left, and in the mouth, towards the right side; while at the same time the affected eye was turned more outwards than ever. On the sixth day of the mercurial treatment his gums became tender, and the calomel was therefore discontinued. A moderate salivation immediately followed. On the fourth day after the discontinuance of the calomel, there was an obvious improvement in the state of the eye, and in twenty-four hours more the improvement was considerable. The movements of

elevation, depression, and adduction of the eye-ball, could be performed to half the natural extent, and he could raise the eye-lid so as to uncover two thirds of the cornea. At the same time the deviation of the tongue and mouth, the headache, and all his complaints, ceased.

From this time he improved rapidly and steadily, so that in a week after the lost movements recommenced they could be performed perfectly. The salivation lasted twelve days, and was always gentle. In twelve days more he was dismissed quite well, having been in the hospital seven weeks.

It is worthy of remark, that after the movements of the affected eye returned so completely, that this eye, when the other was covered, could follow a moving object briskly in any direction, some days more elapsed before the affected eye accompanied the other in its movements, when both were uncovered. For example, if the patient was directed to look at an object straight before him, he squinted the left eye outwards, and looked at it with the right only; but if he was told to look at it while the right was covered, he turned the left on it; and when the right was then uncovered, he directed both eyes on the object, and for a few seconds followed it with both, when it was moved before him.

I shall not attempt to explain the singular fact mentioned at the commencement of the case, as to the man first seeing double, and then remarking a gradual approximation of the two figures till they coalesced, and he saw single,—while the squinting of the eye nevertheless continued. This is so different a phenomenon from what we should expect in the circumstances, that I shall not insist on the accuracy of the statement, because it was drawn up from the man's own account of what occurred some days before I saw him. Yet it is fair to add, that he always gave a very clear narrative of the progress of his illness, and never deviated in any particular from his first statements. In such a case, we should expect—not that the images would gradually approach and coalesce—but simply that the individual would gradually acquire the habit of abstracting his attention from one of the images, and so recover single vision.

CASE II.—*Palsy of the Portio Dura of the Seventh Nerve on both sides.*

A young man, of middle stature, was admitted into the Fever-hospital on account of a smart attack of continued fever of the inflammatory type, but without any particular local inflammation. On the fourteenth day of the disease he got quickly better by critical sweating, the pulse falling from 120 to 72 in the course of a single night. Nothing occurred to interrupt convalescence till the end of the fourth week, when he complained of a sore mouth, for which a vinegar wash was ordered. In five days more, however, the man continuing still to complain of his mouth, a careful examination was made, when the dead stillness of his countenance at once attracted attention. The lips were completely palsied, and could not be closely shut, the nostrils could not be curled, the upper eye-lids could not be closed, and he could neither laugh nor whistle. At the same time the sensation of the affected parts was every where perfectly entire. He had not the slightest fever, no headache or local pain of any kind, except soreness of the mouth; and his only complaint, indeed, was of the dryness and soreness of his lips.

Low diet was ordered, blisters were applied behind the ears, and leeches immediately before them, and laxatives were frequently administered; but without the slightest advantage. About this time the last patient, with palsy of the *motor oculi*, recovered apparently under the operation of mercury. The same treatment was therefore applied in the present instance, and a smart salivation was brought on, which terminated in a copious impetiginous eruption over the whole face. The patient, however, did not derive the slightest benefit. All the parts supplied by the muscular portion of the seventh nerve, on each side of the face, continued in a state of perfect paralysis. After remaining three months in the hospital he was dismissed in the same condition; and I have never since been able to receive any information of the progress of his disease.

CASE III.—*Paralysis of the Portio Dura of the Seventh Nerve of the Right Side.*

When in the country last autumn, I was requested to visit a young man who was supposed to labour under palsy. His paralytic affection was of five or six days' standing; and it was preceded for some days by severe aching pain in the whole right side of the face. When I saw him the pain had ceased; but the whole right side of his face was completely paralyzed. In a state of repose it did not present any peculiar appearance, except considerable depression of the right eye-brow. But on careful examination I found that he was unable to whistle, to curl up the right side of the nose, to elevate the right eye-brow, or to close the right eye-lid; and when he laughed the mouth was drawn much to the left side. The right eye watered a good deal; and when told to close it, he closed the lids imperfectly, and turned the pupil upwards beneath the upper eye-lid.

He complained of acute pain on pressure upon the cheek in the region of the exit of the infra orbitary nerve, and likewise in the jaw at the exit of the inferior maxillary nerve upon the chin, also of *tinnitus aurium* when at work. He had never had headache, or any pain or swelling before or around the ear; neither was there ever any weakness of the limbs or arms, any material difficulty in speaking, or divergence of the tongue from the straight position when thrust out. The sensation of the cheek, too, was quite entire. The pulse was natural.

I recommended him to have a blister applied frequently before and under the right ear; and after following this plan of treatment to resort to a mild course of mercury if he was not relieved. Six blisters were in consequence successively applied between the close of September and beginning of December; and during the latter part of that period mercury was given so as just to affect the mouth.

Some amendment was remarked after the application of the last blister, which extended from behind the ear to the chin, and acted very severely. Till then he experienced no improvement, and since then he has made but little progress. I am unable to state the precise amount of amelioration that has taken place; but I have been informed by the clergyman of his parish, that he can now close the right eyelids completely, but does so very slowly,—that the other palsied actions of the muscles of the face appear to remain nearly as when I saw him,—and that he has still acute pain on pressure on the cheek under the eye, or on the lower jaw near the chin,—but that he continues entirely free of general palsy, or any head symptom.

Aug. 18th, 1834.—The patient eventually got quite well.

CASE IV.—*Palsy of the Optic Nerve (?)*

The next case to be mentioned I have entitled palsy of the optic nerve; although I believe the propriety of the name is doubtful.

A middle-aged man, of meagre habit, and very deeply scarred with small-pox, was admitted in the summer of 1829 into the surgical department of the Infirmary, on account of chancres and bubo. The chancres soon healed; but the sore left in the groin after the suppuration and opening of the bubo was untractable. While in this state, he was attacked with dysentery, which at that time (Autumn 1829) prevailed in the hospital, and was so fatal that about a fourth of those who were taken ill perished. Being transferred to the medical department on account of the dysenteric attack, he became my patient. At this time he had dysentery in its worst form; and although the acute stage was soon subdued, the symptoms nevertheless shewed that extensive ulceration had taken place in the intestines; and he died six weeks after I saw him.

At first no attention was paid to the circumstance of his being blind of an eye, as the marks of severe confluent small-pox seemed to account for it sufficiently. But on his mentioning to me incidentally, that the sight was lost only two years before, careful inquiry was made; and it was then learned, that, on the occasion alluded to, he had been a patient in St. Bartholomew's Hospital, London, with severe headache, giddiness, feverishness, and incomplete palsy of one of his sides; and that he gradually got the better of these symptoms, but was at the same time attacked with inflammation of the left eye, which burst, and became totally blind.

It was natural in these circumstances to expect that some injury would be found in the course of the fifth nerve. This nerve, however, was found quite healthy, so far as the sight and touch could determine. But the optic nerve of the affected side, between its exit through the orbit and its decussation with the opposite nerve, was not more than half the breadth of the other, and was grey in colour, and flaccid in texture. Between the point of decussation and the thalamus of the opposite side it was of the natural whiteness, but softer and less than its fellow; and the thalamus itself was somewhat flattened. The brain was otherwise healthy, except that a very great watery effusion had taken place under the arachnoid coat over the whole external surface, which appeared to account for the severe headache and frequent incoherence remarked towards the end of his illness. There was no appearance of an old cyst or other disorder in the substance of the brain. The colon was covered to an enormous extent with ulcers in various stages of progress. The left eye was completely disorganized.

I am quite aware that, in calling this case palsy of the optic nerve, I may err in taking for the cause of the destruction of the eye what was really its effect. Neither do I pretend to say that there is much probability in the view here given. But it appears to me right to make known the particulars, because it is not impossible that diseases of other parts of the nervous system, besides the fifth nerve, may lead to destruction of the eye; and this is presumptively a case of the kind, the presumption being founded on the bursting of the eye having been immediately preceded by some organic disease of the brain, and being not associated, as usual, with disease of the fifth nerve.—*Edin. Med. and Surgical Journal.*

ST. GEORGE'S HOSPITAL.

To the Editor of the Medical Gazette.

Sir,

If you would allow me to record, from time to time, in the pages of your journal, some of the cases which are brought before my attention and that of my fellow pupils, at St. George's, I think I could relate some that would prove interesting to the senior members of our profession, as well as to those of my own standing.

In relating this case, I have taken care to separate facts from conjecture; so that your readers may draw conclusions for themselves.—I remain, sir,

Yours obediently,

A Pupil of St. George's Hospital *.

Oct. 7, 1834.

Case of Disease of the Pineal Gland (?), *with Remarks.*

Matilda Kendal, æt. 21, admitted June 11th, under the care of Dr. Macleod. Complains of a severe pain in the back part of the head, extending down the nape of the neck. There is no tenderness on pressure, nor any thing preternatural to be observed externally. She feels much general oppression, her nights are sleepless, and there is great debility. The eye-sight is impaired; pulse 80, soft, of good strength; skin cool and moist; tongue loaded in the middle, red at tip and edges; bowels confined, it being a week since they had acted last. Some thirst; no appetite; urine natural; catamenia absent for two months.

About six weeks ago she caught a very severe cold, accompanied by cough, which continued for some time. The pain above-described supervened upon this, and on the subsidence of the cold still continued, having become more and more severe, up to the period of her admission. The following medicines were prescribed:—

Subm. Hyd. gr. iij. h. s.; Haust. Sennæ cras mane; Haust. Salin. ℥iss. 6tis horis. Fever diet.

12th.—Bowels freely purged; in other respects as before.

Rep. Medicamenta pro re nata. Emplast. Lyttæ Nuchæ.

20th. — She experienced some slight amendment in her general feelings for the first two or three days after the above treatment was adopted, but the pain in the head does not seem to have been at all relieved. A fluttering convulsive movement has been observed for some days in the sterno-cleido mastoid muscles, particularly on the left side. Answers questions in a sharp altered tone.

Applic. Hirud. xx. nuchæ.; Calomel. gr. v. hac et crast. nocte; Haust. Sennæ, quamprimim et cras. mane.

23d.—The leeches afforded no relief. Has been observed, from an early hour this morning, to sit up in bed, with her head bent forward upon the knees and her hands grasped across the occiput. States that the attempt to raise the head gives her violent pain in the back of head and neck. Bowels freely purged; pulse 90, soft; tongue white and loaded; considerable thirst; appetite improving.

Cucurb. cruent. Nuchæ ad ℥xiv. Head to be shaved, and spirit lotion to be kept constantly applied to it. Cal. gr. v. 6tis horis.

27th.—Symptoms have continued unabated, and with little change, except that she has had an attack of spasmodic twitching of the right arm to-day.

30th.—Continues to complain of the pain in the back part of head; which, she says, has been in no degree relieved by any of the remedies employed. Head still bent forward upon the knees; mouth a little tender from the mercury; tongue patched, the crust peeling off in irregular portions. Vomited for the first time. Bowels open; urine rather scanty; pulse 112, small; skin cool.

Rep. Calomel, bis die; Haust. Sennæ quotidie mane.

July 4th.—Mouth sore; pain in head and neck very much relieved; sight better; spasmodic action in muscles has entirely ceased; slept well last night, having been able to lie down in bed without aggravating the pain.

On the following day, the report says, "began to complain, during the night, of a recurrence of the pain; head bent forward as before; some appearance of aphthæ about the edge of tongue; less ptyalism."

Hirud. xx. occipiti; Rep. Med.

7th.—The leeches afforded no relief; on placing her in the recumbent posture for a few moments to-day, she screamed from the aggravation of suffering.

Empl. Lytta occipiti; curatur ulcus ung. Hydrag. Rep. Med.

11th.—No better; expression of countenance vacant; some deafness; strabismus; the pupils contract, but sluggishly, before the light of a candle.

14th.—Partial stupor. The contents of rectum and bladder came away to-day unconsciously.

* We have inserted the following case with pleasure, the writer having authenticated it by sending us his name; and we shall be happy to hear again from our new correspondent.—E. G.

Calomel, gr. iij.; Digital. gr. j. M. fiat pil. 6tis horis sumenda.

16th.—Insensibility deepening, and accompanied by jactitation.

From this period she became gradually worse, having occasional fits of perfect stupor, and passing dark offensive evacuations from the bowels. She was then seized with vomiting of green liquid matter, and died on the 20th, emaciated to the last degree.

Post mortem examination.—On removing the skull-cap the dura-mater near the longitudinal sinus was found firmly adhering to the subjacent surface. All the vessels of the brain were loaded with blood. Immediately beneath the fornix, lying on the nates and testes, and projecting between the thalami into the third ventricle, a tumor was discovered of the size of a large walnut, and composed apparently of coagulated blood, with embedded portions of brain-like matter pretty thickly interspersed. The brain in the vicinity of the tumor was softened, but no other lesion was discovered.

Observations.—Almost from the very first it was suspected that a slowly-growing tumor in the brain was the cause of this girl's constant and severe suffering; but the most favourable view that could be taken of the case was to suppose that there was effusion only. The indication to be followed, therefore, was to stimulate the absorbents, and thus, if possible, to remove the fluid.

Local bleeding having been premised, and counter-irritation set up, with a view to the abatement of any inflammatory action there might be in the brain, mercury was exhibited, to the extent of affecting the mouth; and it was singular to observe how close upon the salivation improvement followed. The beneficial effect of remedies, however, was soon overpowered by the inherent tendency of the disease to become aggravated; and symptoms such as usually proceed from slowly-increasing pressure on the brain, made their appearance, accompanied by others that are not so commonly observed.

The most striking features of this case were the singular attitude, which, for a long time, was alone supportable, and the peculiar shrill tones in which the patient made known her wants. I need not remark, that a voice, subdued in proportion to the severity of the disorder, is what is ordinarily heard from patients, at least while the mental faculties are retained; but in this case, notwithstanding the extreme exhaustion of the sufferer, her shrill tones could be heard in any part of a long ward; and I cannot but think there was some connexion between the character of her voice and the nature of her complaint.

The position which she assumed tended to throw the whole weight of the brain upon the anterior part of the skull; and this, viewed in connexion with the post-mortem discoveries, affords some explanation, I imagine, of the comparative relief she experienced from the seemingly uncomfortable posture she maintained day and night; the effect being to relieve the parts supporting the tumor, viz. principally, the nates and testes, from the additional burthen of the cerebral mass generally.

Relief having been afforded, though but temporarily, by the calomel, when that passed off, it was attempted to combine with it some other medicine that should act with increased force upon the absorbent system. The combination, therefore, of calomel and digitalis was prescribed, though little hope was entertained that much benefit would be derived from any plan of treatment. The disease in the brain, whatever it might be, with a slight intermission only, had continued to increase from the period of the patient's admission into the hospital; the almost constant pain being a sufficient indication of this fact: but at length the brain, from the effects of increased pressure, ceased to indicate the progress of the disorder by the last-named symptom, and partial coma followed; the eye-sight and hearing having previously been affected, the sense of touch soon became impaired, and the control over the rectum and bladder lost.

On reflecting on the circumstances of this case, and especially calling to mind the appearances after death, I am strongly inclined to believe that the tumor discovered was a malignant enlargement of the pineal gland.

GUY'S HOSPITAL.

To the Editor of the Medical Gazette.

Sir,

Believing that a brief account of the operations performed at this hospital in the course of the week, would be suitable for your excellent and most esteemed weekly periodical, I take the liberty of sending them to you for insertion.—I am, sir,

Your obedient servant,

A Pupil.

October 7, 1834.

Recent Operations.

It having been posted up in the hospital this morning, that "several operations" would take place; and it being the first day for operating in the theatre since the arrival of students at this hospital for the session; at one o'clock (the hour appointed

for operating) the theatre was crowded to oppression—even to overflowing. The inconvenience of the smallness of the place, and the practice of suffering dressers to station themselves immediately between the patient and pupils, was at this time particularly evident. The first patient who was brought into the theatre to be operated upon, was under Mr. Morgan's care: a man who had for a considerable time suffered from disease of the tarsus. The foot was amputated by Mr. M., with the common circular incision. Spasmodic action of the muscles of the leg was very considerable during the operation.

A tumor was afterwards removed from the shoulder of a female, by Mr. Aston Key: it appeared to be of the steatomatous nature, and was of considerable size.

Another patient was then brought in, to submit to amputation at the thigh, for extensive disease of the cartilages and other other structures of the knee-joint. She was a young girl, whose health had been lately sinking under the constitutional irritation which had been induced by the disease. Mr. B. Cooper performed the operation with much neatness, making a double flap.

A boy next walked in, with a tumor which was situated on the back: this was quickly removed by Mr. Morgan.

The last case was that of a poor fellow, aged about 50, who was to have his penis amputated, for a malignant disease which affected the extremity. A fillet was passed around the penis at its root, to restrain hæmorrhage, and the penis was likewise extended by an assistant laying hold of it at the extremity; the patient being in the semi-erect position. Mr. Morgan, with one stroke of an amputating knife, separated the unhealthy from the healthy part, which latter portion was extremely swollen; the arteria dorsalis penis, and arteries of the corpora cavernosa, were secured by ligatures. A gum-elastic catheter was then passed, and left in the urethra. The wound was dressed with a pledget of lint.

APOTHECARIES' HALL.

Names of Gentlemen to whom the Court of Examiners granted Certificates of Qualification on Thursday the 2d of October, 1834.

John Sladden, Eastry.
Frederick Davies, Wells.
Isaac Guillemard, Exeter.
Robert Blyth, Colchester.
John Hawkins, Peckham.
John Acton Booth, Wigan.
Thomas Mills Beaumont, Huddersfield.
Henry Bullock, Pickwell.
John Coates, Rochdale.
James Deane, Spalding.
Samuel Sharman Brame, Lowestoff.
Henry Rixon, Lowestoff.
Alfred Robert Temple, New Malton.
William Stuart, Woolwich.
Thomas Burlton, Woolwich.
Lawrence Spencer, Preston.
Thomas Lewen Marsden, Leeds.
Joseph Denby Sainter, Doncaster.
Charles Upton, Doncaster.
Thomas Walker, Abingdon.
Henry Calver, Cambridge.
John Slyfield Garland, Weymouth.

Names of Gentlemen who received Certificates October 9.

John Nathaniel Gardner, Worcester.
Robert Gardner Hill, Lincoln.
George Leney, Wrotham, Kent.
John Henry Freeman, Wrotham, Kent.
George Fayrer, Bodmin.
Edward Francis Crosse, Knigton, Herefordsh.
James Bates, Halifax.
Joseph Humpage, Bristol.
Charles Pothecary, London.
Robert Gray, London.
John Collins, London.
William Harvey, Taunton.
Robert Faulkner, Bath.
Arthur Maber, Swansea.
John Hand, Swansea.
Edgar Jones, Brishington.
Thomas Mee Daldy, Rainham.
Edwin Bennett, Rainham.
Geo. Haynes Fosbroke, Bedford, Warwicksh.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *Oct.* 7, 1834.

Abscess	4	Heart, diseased	1
Age and Debility	63	Hernia	1
Apoplexy	10	Hooping-Cough	11
Asthma	21	Inflammation	33
Cancer	2	Bowels & Stomach	13
Childbirth	15	Brain	4
Cholera	27	Lungs and Pleura	7
Consumption	79	Insanity	2
Convulsions	47	Jaundice	1
Croup	5	Liver, diseased	2
Dentition or Teething	7	Measles	5
Diabetes	1	Mortification	4
Diarrhœa	5	Paralysis	1
Dropsy	18	Rheumatism	1
Dropsy on the Brain	14	Scrofula	1
Dropsy on the Chest	2	Small-Pox	5
Dysentery	1	Sore Throat and Quinsey	3
Erysipelas	4	Spasms	4
Fever	10	Stone and Gravel	1
Fever, Intermittent, or Ague	1	Thrush	4
Fever, Scarlet	8	Tumor	2
Fever, Typhus	3	Unknown Causes	79
Gout	2		
Hæmorrhage	2	Stillborn	17

Increase of Burials, as compared with the preceding week . . . 213

METEOROLOGICAL JOURNAL.

Oct. 1834.	Thermometer.	Barometer.
Thursday . 2	from 36 to 64	30·03 to 30 09
Friday . . 3	35 62	30·08 30 06
Saturday . 4	37 62	30·08 30·12
Sunday . . 5	35 68	30·10 30·14
Monday . . 6	41 74	30·14 Stat.
Tuesday . . 7	43 70	30·13 30·11
Wednesday 8	31 65	30·11 30 05

Prevailing wind, S.W.

The morning of the 5th and 6th foggy; otherwise generally clear.

CHARLES HENRY ADAMS.

W. WILSON, Printer, 57, Skinner-Street, London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, OCTOBER 18, 1834.

LECTURES

ON

DISEASES OF THE CHEST,

In the course of which the Application of

PERCUSSION AND AUSCULTATION

ARE FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture III.

THEORY OF THE SIGNS OF DISEASES OF THE LUNGS—(continued.)

PERCUSSION.

We now proceed to the subject of Percussion.

The diseases of the chest were involved in great obscurity from the earliest periods of medicine up to the middle of the last century. The reason of this appears obvious. In the first place, the lesions of the particular textures which enter into the composition of the lungs and heart, were not then well understood. An acquaintance with morbid anatomy in general had not arrived at the point which it has attained at the present day; and it follows as a matter of necessity that if these morbid lesions were not known, neither could the signs be to which they gave rise. We have been too much, also, in the habit of satisfying ourselves with the study of signs alone, and considering them as diseases, instead of reflecting upon the alterations of structure which give origin to them. Thus we find that Cullen has established a genus which he calls *dyspnœa*. Now difficulty of breathing is only a sign of a particular condition or conditions of the chest, and is not a disease: it is the internal cause which produces the dyspnœa that is really the disease. Thus, again, Cullen and other authors have defined *asthma* to be a difficulty of breathing occurring at intervals, without fever; but this, which they call a disease, is merely a sign, and a sign depending upon various causes.

Bichât, by his views of general anatomy, gave a new impulse to the study of morbid anatomy. He, from a hint given by Pinel, no longer regarded an organ as a homogeneous structure, but as composed of a variety of different tissues. He analyzed these tissues, and pointed out that they were subject to different physiological and pathological laws. Since that period morbid anatomists have taken the same view, and followed up their investigations according to the same principles. They have unravelled (if I may so express myself) the diseases of the various elementary structures of a viscus, and have shewn them in their isolated and combined states. To take an example from the lungs, we have here an organ which does not consist of a homogeneous structure, but of air tubes formed of cartilage and mucous membrane, &c.; of cellular tissue and vesicles, of blood vessels, of nerves, and, finally, of a serous membrane, which envelopes the whole. All these have diseases peculiar to themselves, which may exist in an isolated or combined manner: thus we may have pleuritis without catarrh, and *vice versâ*. As we proceed we shall have constantly-recurring evidence of these facts. Morbid anatomy is advancing most rapidly, and consequently affections of the chest, like other diseases of the body, are really becoming better known.

In the next place, diseases of the chest were not understood, on account of the equivocal nature of their signs. Dyspnœa, a great and leading sign of these affections, is equivocal, inasmuch as it is common to every disease, both of the lungs and the heart, when it has reached to a certain point; and it also occurs in some diseases external to the thoracic cavity. Cough,

too, is equally equivocal, for it may occur in all diseases of the chest, and even in some abdominal disorders; nor is the violence of a cough any proof of the gravity of the disorder, as the severest may happen from comparatively trifling affections, as a slight inflammation attacking the larynx, whilst the lung may be profoundly lesed, as in peripneumonia, and cough may be absent.

There can be no doubt that the inadequacy of these signs to determine any specific disease first led Avenbrugger to think of percussing the chest. But, before I speak of his discovery, I will mention a few particulars relating to himself. Leopold Avenbrugger, or Awenbrugger, was born at Graets, in Styria, in 1722: he became physician to the imperial hospital of the Spanish nation at Vienna. There it was, as he expresses it, *inter tædia et labores*, that he prosecuted his studies on this subject for a period of seven years; and in the year 1763 he published a work which he called "*Inventum novum ex Percussione Thoracis humani, ut signo, abstrusos interni pectoris morbos detegendi.*" No notice whatever was taken of his book until the year 1770, when Rozière de la Chassagne, of Montpellier, translated it, avowing he knew nothing of the subject practically; and the inference which he would lead you to draw is, that he did not think much of the discovery himself. The pamphlet seemed now consigned to oblivion: however Stoll, Van Swieten, and Cullen, in his First Lines, make some mention of it; but, like Rozière de la Chassagne, declared they knew nothing of it practically. Corvisart, when preparing his celebrated clinical lectures, first met with the subject in reading Stoll's work. He immediately commenced a series of experiments, which he continued for twenty years; and in 1808 he published a new translation of Avenbrugger, with his own commentaries; a work that has been translated, I believe, into every European language.

Principle upon which percussion depends.—Let us, in the first place, speak of the principle upon which percussion depends. Suppose a hollow ball, or a vessel of any kind, made of wood, glass, metal, or any other material, and containing atmospheric air only: strike it with the finger, and a certain sound will be produced, varying, of course, in kind and intensity, according to the size of the vessel, the nature of its parietes, and their thickness. Half fill this vessel either with a fluid or solid matter, percuss it, and there will be a difference in the sound. The sound will be duller than it was before; and the lower part, containing the fluid or solid, will be duller than the upper, which contains air only. Fill the vessel completely, and the sound of course will be duller than in the first instance. This is so perfectly obvious that no experiments can be necessary to prove it.

What is the human chest? It is a hollow cavity, containing within it two organs; the one solid, at least so far as regards percussion—the heart; and the other the lungs, an organ containing a quantity of atmospheric air. Hence the chest will give a louder sound in the healthy state, on percussing it, than any other part of the body.

Before we proceed to elicit the various sounds which may be produced by the percussion of the chest in the living subject, let us first describe some preliminary steps relative to the position of the patient, &c.

Position of the patient.—It is best to place the patient in a chair with a wooden seat: if, however, he be in bed, let the curtains be widely opened, that the sound be as little deadened as possible. The chest may be examined in reference to its anterior, lateral, and posterior regions. If the anterior, the head and shoulders should be thrown well back, and the arms brought behind the chair: in this manner the pectoral muscles are put upon the stretch, and a better sound is produced. If the lateral region is to be examined, the body should be inclined to one side, and the arm passed over the head, and then percussion is easily performed from the highest point of the axilla to the lowest rib: if the posterior region, let the patient fold his arms, incline his shoulders inwards, and his head forwards; the muscles of the back will thus be rendered tense and firm, and the sounds may then be easily obtained.

You will observe that the objects we have in view in these positions are to place the patient in a convenient posture for the operator, and to render the external parietes of the chest of the patient as firm as possible, by putting the muscles upon the stretch.

Mode of percussing.—With regard to the mode of percussing, you should never strike the patient with much force, for by that means you give pain, and do not elicit a good sound. The object is to percuss smartly and quickly; the fingers should remain on the chest but an instant. To percuss effectually, the four fingers of the right hand must be employed; their extremities should be brought into the same line, the index being supported by the thumb. When you percuss a rib, strike parallel to it; for if you percuss it transversely, your fingers will then come upon the intercostal spaces above and below it. Always be careful, too, to percuss also at

the same angle, and with the same force, in comparing the opposite sides of the chest, as a slight difference will occasion a difference in sound, which would not occur if the percussion were properly effected.

It oftentimes happens that the parietes are flaccid, or fat, or the skin of the patient is so exceedingly irritable and tender, that he cannot bear the blow of the fingers, however slight. These difficulties are obviated by the instrument [shewing it] invented by Piorry, called the plessimeter, being, as you see, a round piece of ivory of about one inch and a half diameter, and two or three lines thick. This may be placed on the chest, and a good sound may be obtained by striking it with the fingers, without occasioning any inconvenience. I often place the fingers of the left hand firmly upon the chest, and percuss them with those of the right. Laennec frequently struck the back of the patient by a slight but quick blow with the stethoscope.

Variations in sound at different ages, and in different temperaments.—A very important question arises here, viz. whether the sound elicited from the chest is the same at all periods of life? Certainly not. The sound produced from the chest of a child is infinitely louder than that of an individual in the middle period of life; and that of the latter is also much louder than from an old person. The reason of this we shall inquire into hereafter.

Are there any differences with regard to sex? As a general rule, a louder sound may be obtained by percussing the female than the male chest. The sound is more distinct also in persons of a nervous or irritable temperament, than in those of an opposite character, although of the same age. These circumstances lead to this conclusion, that you should never compare the sounds produced from the chests of two or more individuals, to arrive at a diagnosis, since these persons may differ naturally; but you should compare the different parts of the chest of the same individual.

Variations according to situation.—It then becomes a matter of importance to determine whether the different parts of the chest of the same individual produce the same sounds: they do not. Laennec, to facilitate the study of this subject, has divided the surface of the chest into the following regions.

Regions of the chest.—The *clavicular* region comprises the length of the clavicle: this region is subdivided into the sternal, middle, and humeral portions. The *anterior superior* region extends from the first to the fourth rib; the *superior mammary* from the fourth to the eighth; the *sub-mammary* from the eighth to the twelfth.

That part of the chest which is occupied by the sternum is called the *sternal* region; it is subdivided into the *superior*, *middle*, and *inferior*.

At the lateral parts of the thorax we have three regions: the *axillary* from the highest point of the axilla to the fourth rib; the *superior lateral* from the fourth to the eighth; then the *inferior lateral*, from the eighth to the twelfth.

The posterior parietes have the following regions: the *supra* and *infra spinal*, corresponding to the supra and infra spinal fossæ of the scapula; the *interscapular*, between the bases of the scapula and the vertebral column; and the *dorsal*, extending from the angle of the scapula to the last rib.

Nature of sound elicited in the various regions.—The sounds elicited by percussion vary exceedingly in the different regions. Thus the sternal extremity of the clavicle gives a loud sound, the middle less, the humeral portion the least; the sound diminishing in proportion as the space becomes greater between the clavicle and the thorax.

The sternum varies in sound according to the region percussed; thus the superior yields the loudest, the middle somewhat less, the inferior the least,—the latter in consequence of the heart being placed beneath it.

The anterior superior region is very sonorous; the mammary nearly equally so in the male; in the female the sound is dull, from the presence of the mamma. The sub-mammary is dull also on the right side, from the liver being placed beneath it; it is often very loud on the left, from the occasional presence of gases in the stomach.

The axillary and the superior lateral regions sound well; but the inferior lateral does not on the right, from the presence of the liver; and on the left it is frequently too sonorous, from flatus in the stomach.

The supra and infra spinal, and the interscapular regions give fleshy sounds; but the spine of the scapula, and the spinous processes of the dorsal vertebræ, yield them louder.

The greater part of the dorsal region is very sonorous; but the lower portion is dull on the left side, and often very loud on the right, for the reasons I have assigned in speaking of the inferior lateral and sub-mammary regions.

[The lecturer here percussed the chest of one of the pupils, and pointed out the differences between the hollow sounds of the chest and the fleshy sounds of other parts of the body; he also clearly demonstrated the differences of the sounds produced by percussion at the different parts of the chest.]

Inferences arising from the preceding observations.—What inferences are we to draw

from these examinations? First, that any cause which tends to diminish the quantity of atmospheric air in the lung must tend to diminish the intensity of the sound produced by percussion, the sound being dependent upon the presence of air. Thus, when a portion of the lung is consolidated, as in hepatization, the sound given by the parietes of the chest over the diseased part is dull, in consequence of the total absence of air in that part. When a mass of tubercles exists in the lungs, there the sound will also be dull, and for the same reason. Again, when fluid accumulates in the pleuritic cavity, it compresses the lung, and diminishes its volume in proportion to the quantity effused; and in proportion to the diminution of the lung so will the quantity of air be lessened, and the sound elicited from the side affected will be consequently obscure.

Our second inference will be the converse of the last, viz. that any cause which tends to increase the quantity of atmospheric air in the chest must increase the intensity of the sound on percussion. We have two remarkable instances of this; the first in emphysema of the lungs, of which disease I shew you a splendid specimen. Here you see the air cells are dilated; some of them have ruptured and communicated with each other, forming the appearance of blisters upon the surface of the organ; here the quantity of air is beyond the normal proportion; and the part of the chest situated over the portion of the lung affected produced a very loud sound.

The next case is that of pneumo-thorax. From causes which we shall hereafter examine, we occasionally find an accumulation of air in the cavity of the pleura. The chest then sounds like a drum on percussing it.

As I have before stated, dyspnœa and cough are signs totally inadequate to the determination of any *specific* lesion of the pulmonary structure, since they are common to them all. By percussion, however, we can discover the locality of the affection, whether it be in one lung or the other, and in what part of the lung; and still more, we can distinguish whether the part be permeable to air or not; but it affords no demonstration of the cause of the impermeability of the organ, as the same dull sound is produced in hepatization or effusion of fluid into the pleura, &c.; nor can we say, when the sound is louder than natural, whether it depends upon emphysema of the lung, or pneumo-thorax. Auscultation overcomes these difficulties.

You thus see, gentlemen, that the method of Avenbrugger affords most important signs of the diseases of the lungs; and it is very probable that Laennec would never have been led to the discovery of auscultation, had it not been for his previous perfect knowledge of percussion.

It is the fate of all discoveries, however great, to meet with objections; not that I think opposition is of any disadvantage to them, for it forces the discoverer to consider his subject on every side, even if it be only for the purpose of its more complete demonstration; and in doing so, new views often arise, leading him to farther discoveries. Percussion has met with its opponents; but the facts are now too well attested to admit of any doubt; and I recommend your constant practice of it—for it requires it—for the purpose of acquiring an early facility.

SUCCUSSION.

We shall defer the subject of Succussion, as it applies only to the particular case of pneumo-thorax, with effusion into the pleuritic cavity, until we arrive at the consideration of that disease.

ADDITIONAL OBSERVATIONS ON THE VENEREAL DISEASE;

Being an Extract from the Annual Report of Diseases treated in the Hospital of the 72d Regiment, at the Cape of Good Hope, in 1833.

By Thomas Clarke, Esq.

[Communicated by Sir James M'Grigor, Bart. with the Author's permission.]

Concluded from p. 41.

There is a little more difficulty, and but a little, in respect of the variety of the disease called gonorrhœa. If we find a train of constitutional symptoms following a simple running, analogous to what is so often observed to follow an ulcer on the prepuce, are we not compelled to believe that they are produced by a poison absorbed in the one case, as well as in the other? But we shall be told that the constitutional disease in the former, though simulating the character, is not the same as in the latter; and that it is always milder, and never extending to the second order of parts. Admitting this to be the case, which, perhaps, it is not always, the identity of the poison is not thereby disproved. That gonorrhœa is so seldom followed by constitutional disease, proves nothing. If it is essential to absorption that there should be a breach of continuity, the rarity of constitutional symptoms from gonorrhœa may, in some degree, be accounted for,—an ulcer in the urethra

not being, as far as I am aware, a frequent occurrence. But if any reliance can be placed on the veracity of those I have had under my care, or on my own accuracy of observation, I find a difficulty, with the utmost deference to an eminent authority, of admitting the fact.

I have seen constitutional symptoms make their appearance, during the existence of a running, the primary disease in itself so mild, and so easily cured, that I could not believe in the existence of an ulcer; and I have also seen constitutional symptoms follow a bubo, which had not been preceded by any running or ulcer whatever; therefore, I do not think a breach of surface essential to absorption, and must look elsewhere for an explanation of the fact of the rarity of occurrence of constitutional symptoms from gonorrhœa. And without presuming to give an opinion, I merely throw it out as a suggestion, that perhaps a solution of the problem may be found in the condition or habit of body of the subject. In every such case that has yet come under my observation, the person had been at one time or other the subject of some variety of venereal disease. The experience of the past year enables me to quote two instances occurring within that period.

I have already remarked that no case of primary ulcer, or of ulcer with bubo, admitted into hospital during the past year, has as yet manifested any symptom of constitutional disease: it is somewhat singular that the only instances should have been afforded by gonorrhœa, out of sixteen cases of this variety of the disease, these symptoms having made their appearance in two of them.

A man was admitted with gonorrhœa, rather mild than otherwise. On the fifth day a smart fever came on, with so much constitutional disturbance as to render copious depletion necessary, severe pains in the shoulders and elbows, with a bounding pulse, and great thirst, with dryness and heat of skin. The running had disappeared, and next day the whole body was covered with a papular eruption, and an erythematous inflammation spread itself over the fauces. This state of things continued for some days, and when the eruption began to scale off, the running returned; it soon, however, disappeared again, but the pains in the shoulders and elbows were not entirely removed till after a course of antimonials and sarsaparilla of three weeks' duration.

This man had been in hospital fourteen months before this time, with an ulcer on the prepuce, elevated, the matter adhering firmly to the surface, with induration. It was healed without the use of mercury, but was tedious, being protracted to a period of thirty-five days.

In the other case the symptoms were less severe, but in character the same. He had also been the subject of previous disease of a gonorrhœa, three,—and of an ulcer on the prepuce, cured without mercury, eighteen months before. It may probably be said that these symptoms ought to be attributed to the previous disease; I think that a more legitimate inference would be that the disease was called into action by a fresh poison being absorbed into a previously poisoned habit.

Before taking leave of this subject I must make a few cursory observations on the cases of constitutional disease which have come under treatment during the period embraced by the return.

There were two cases of iritic inflammation accompanied with pains in the larger joints, and copper coloured blotches on the skin.

They had both been the subjects of primary and constitutional disease about twelve months previously, and exposure to cold and wet weather, was the exciting cause in this instance, bringing forward the disease in a new form. In these cases the efficacy of mercury is undoubted and indispensible. The mild tonic action of the Plummer's pill, in conjunction with sarsaparilla, is preferred to all others. The disease yielded gradually, and is to all appearance completely removed.

One very severe case occurred in a recruit, who had lately joined the regiment from Europe. What the primary disease may have been precisely, I do not know, but from his own account I take it to have been phymosis, with one or more ulcers on the internal surface of the prepuce near the frænum. The disease having been contracted in Scotland and very much neglected on the march to the place of embarkation, was aggravated of course, and it became necessary, it would appear, to remove a considerable portion of the prepuce. He was subjected to the influence of mercury before embarkation, and afterwards on board ship, and on arriving

here about five months after contracting the disease, the appearances were, a tubercular eruption over the head, face, and upper extremities, an ulcer on each tonsil, with sharp abrupt edges, the surfaces covered with a thick tenacious yellow matter. Acute pains in the elbows and knees, with inflammation of the periosteum of the tibia, and a scabby eruption upon the scrotum, and general health much impaired. This case required a treatment of three months duration, no mercury was used, and the cure appears to be complete; six months have now elapsed, and no vestige of the disease is visible. The health and strength are perfectly restored.

The next case was one of a papular eruption, generally over the body, of a brownish colour; pains in the elbows and knees, and an erythematous inflammation of the fauces. He had had an ulcer on the prepuce six weeks before, and had been fourteen days in hospital on detachment, and treated with mercury. The cicatrix of the ulcer was gristly and inflamed. After six weeks under treatment he was discharged to duty. On examination three months after, I find the deposition on the prepuce not yet absorbed, and a dryness in the fauces, more particularly in the mornings; therefore I do not consider him safe from a recurrence of the disease, probably in a new and aggravated form.

The next case is that of a man who declares he never had any venereal disease whatever, excepting a running, for which he was fifteen days in hospital in Dublin in the year 1827, and from his character I have no reason to doubt the truth of his statement. He presented himself with an eruption of pustules chiefly on the face; an oblong shaped and ragged edged ulcer on each of the tonsils; pains in the larger joints; with an inflammation of the pericranium, forming a node on the frontal bone. He had been suffering in his health for some time, but it was not until the eruption made its appearance that he took shelter in hospital.

This proved a tedious and intractable cure. The pustules extended themselves over the whole body, in many places running into one another, and forming extensive ulcerations.

The progress of the ulcers in the throat was arrested, but it appeared that the eruption must run its course. A serious impression was made on the general health in the course of the disease; the debility was considerable. The constitution of this young man being naturally good, I was not unwilling to try its strength against that of the disease. By a steady perseverance in the use of such remedies as are usually employed, excluding mercury, with a diet the least stimulating and most nutritive, and taking advantage of such exercise as circumstances admit of, the disease was made to yield, or exhaust itself. Four months elapsed, however, before he was in a condition to leave the hospital. Since that time, now nearly five months ago, he has enjoyed perfect health in the discharge of his duty.

How this poison, if it was one, was absorbed into the system, relying upon the man's accuracy, may be difficult to explain, admitting it to be a law of nature that absorption does not take place from sound surfaces; but as we have daily opportunities of observing that a secreting surface is capable of being irritated and inflamed, and thereby excited to undue action, is it very unphilosophical to suppose, that the absorbents may in like manner be so excited, and absorption take place from this inflamed surface without an actual breach of continuity? A case of phymosis once came under my care in which the matter had been pent up for several days; on retracting the prepuce, its internal surface, and that of the glans, were inflamed and continued to secrete until the inflammation was subdued, but not the smallest appearance of ulceration could be detected. This was however followed by constitutional symptoms; an eruption, pains, and sore throat. I know with certainty that this was the first venereal disease the person had ever been affected with. This state of things in a less degree might well escape the observation of a soldier, or justify him in saying that he never had venereal.

Whether mercury would have been beneficial or ought to have been administered in the cases above related, is a question into the merits of which I do not at present mean to enter. The last case to which I shall advert, (the remaining cases being slight reccurrences of former affections) is that of a man who embarked with the regiment in July 1828, having at the time an ulcer on the external surface of the prepuce. From his own account it would appear that the ulcer was at first disposed to heal,

but afterwards became very painful and spread largely over the surface. He was subjected to mercury and kept fully under its influence, for a period of six weeks, from the effects of which he had not recovered when he disembarked.

Two years and four months afterwards, he presented himself at the hospital, with a few copper-coloured blotches on the shoulders, and complaining of acute nocturnal pains in the joints. These pains proved exceedingly obstinate, leaving and returning to the several joints in succession. After a treatment of upwards of two months, in which mercury was not employed, he was discharged, free from complaint, and continued to do his duty till last winter, during which he came three times to hospital complaining of pains, which were easily removed in the course of fifteen to twenty days. Six weeks ago he presented himself in a very different condition. Acute pains in the joints; a pustular eruption on the head and face; a copious secretion from the membrane of the nose; a node on the frontal bone; and two deeply excavated ulcers on the tonsils. This is the most severe case that has yet occurred; but as it is still under treatment, I must forbear making any remarks until a future occasion.

After what I have stated, I come to the following conclusions:—

1st. That the poison which produces all the varied appearances of venereal sores and gonorrhœa, is one and the same.

2nd. That the matter of gonorrhœa is the parent stock from whence the numerous family of venereal diseases has sprung.

3rd. That the diversity of character of these diseases is determined by many and various circumstances; such as climate, races of men, temperament of body, habits of life, and other influences, some known, and others unknown.

4th. That mercury is not indispensably necessary to the cure of this disease; but as it may be beneficial in some and prejudicial in others, its employment must be left to the judgment and discretion of the practitioner.

Cape of Good Hope,
Dec. 21, 1833.

ON THE NERVOUS CIRCLE OF SIR CHARLES BELL.

By D. Badham, M.D.
Fellow of the Royal College of Physicians of London, &c.

The nervous circle of Sir Charles Bell has always appeared to me the least satisfactory application of those results of his industry, patience, and talent, which now assist us in explaining the different functions and attributes of the nerves. I will venture to say without reserve, that I consider this eminent physiologist to have completely failed in his endeavour to prove a circle of communication, whether by means of a circulating fluid or otherwise, between the motor nerves of a part, and the nerves of sensation of the same part; nor shall I stop at the still bolder assertion, that I am greatly deceived if the very experiments adduced in proof of this doctrine, might not be used with equal plausibility on the other side. His beautiful experiments, as well on the thirty-one pairs of spinal nerves (in which he so clearly demonstrates the propriety of the anatomical distinction which he has adopted), as on the trigemini (where the analogy with these last is proved to be perfect), leave us nothing to desire, except that he had left matters here, and had not been led into precipitate conclusions from facts so well authenticated.

The fifth pair, as your readers are aware, is a nerve of sensation and of motion, not (as I find myself anticipated in observing by Mr. Walker, in his paper on this nerve lately published in the Gazette) as respects one branch, the inferior maxillary, namely, but also as regards the ophthalmic and superior maxillary, which are therefore improperly set down by Dr. Henry as nerves of sensation merely. Being similar in all respects to the spinal nerves, it must, like them, have a compound function to execute. The seventh, on the other hand, is merely a nerve of motion. "How happy, then, are we," says Sir C. Bell, "in the opportunity arising from their peculiarity of course," which is dissociated and different, "of making experiments upon these two nerves, and of ascertaining separately the respective functions of each, without leaving so

much as a pretext for cavil." On these nerves, accordingly, a set of experiments were made, from which the existence of a "circle of nervous communication" was supposed to be established. "We have seen two nerves (the nerves in question) going to the same muscle, divided (unconnected); and when we touched one of these nerves at its extremity connected with the muscle, the muscle was excited; but when we touched the extremity connected with the brain, it was attended with no result. On the other hand, taking the other nerve, also connected with the muscle (branches of which can be seen dispersing themselves to its minutest fibres), and irritating it, as we had done with the former, the muscle was quiescent—no power was propagated in that direction; but taking the other extremity of this divided nerve (connected with the brain) and pinching it, there was pain." Hence he arrives at the precipitate conclusion, that the nervous influence, whether a fluid, a vibration, or some galvanic influence, "cannot be propagated by the same tube backwards and forwards, and in opposite directions, at the same instant of time; but as both nerves are connected with the same brain, and with the same muscle, he infers that the only difference is in the direction in which they convey their impression;" in other words, that nerves of sensation and nerves of motion have different functions, simply from the course of the fluid through them, or the direction in which the impression is propagated.

Such an inference, however, seems to rest upon very insufficient data, and is certainly not warranted from the experiments. In the first place, in touching the muscular extremities of the motive nerve (portio dura), how could motion be produced by any other means than the backward current, so to speak of nervous influence from the brain? and if it be here proposed to us how, this explanation being correct, a backward influence did not extend to the muscle when the cerebral extremity of the nerve was excited, it will be sufficient to remind the reader, that the influence in this latter case would not be backward, but direct; so that had we no explanation to offer for this phenomenon of the passive condition of the muscle, it could go no way in assisting Sir Charles Bell's assertion concerning the inaptitude of nervous influence to travel along the same nerve two ways. But do we not give an explanation of why the muscle was passive in this case, in making the simple statement that the muscle was under the control of the will; but the will was not under the control of Sir Charles Bell's tweezers? Or is the other half of the experiment more satisfactory? This consisted in touching the muscular extremity of a nerve (which his own experiments had taught him to be a nerve of sensation), when no result ensued. Yet had the "nervous circle" contended for by this distinguished physiologist existed, the impression must have travelled to the brain, must have slid down the nerve of motion, and must have caused the muscle immediately to contract. How, if we admit the supposition of Sir C. Bell, are we to account for the absence of all motion here, unless, indeed, we could shew that the motor nerves were all paralysed, and incapable of transmitting the impression? Lastly, when we are told that by pinching this same nerve of sensation at its cerebral origin pain was felt, it is not out of place to remark, that pain, in the first place, is not an attribute of nerve but of brain*;

* In a paper recently published in the Medical Gazette, in examining the evidence upon which certain of the inferior grades of animals are supposed to *feel*, I took occasion to insist upon the *cerebral seat of pain*. I shall not occupy your columns with a reiteration of the arguments there adduced in support of my views, but cannot forbear alluding again to a speculation which even the most eminent physiologists have countenanced, especially as it has in some instances conducted to as curious a process of reasoning as is to be found in the archives of Physiology. Thus we find Sir C. Bell stating that "there are innumerable animals which have neither brain nor nerves, and yet have life, and sensibility, and motion; but as *these* phenomena can only be ascribed to such an organization, he infers that the *matter* of nerve *exists*, but is merely *diffused* in *their* bodies, whereas it is *connected* and bound into fasciculi for connecting different parts and organs in our own." Here we naturally inquire —1, How, if nervous fasciculi are requisite to connect parts in action, there should be a *propagated* action in animals who *have no such nervous fasciculi*, but in which the nervous matter is feigned to be diffused? 2, What evidence have we of sensibility—not organic sensibility, but a power of *feeling pain*—even where we *can demonstrate* a nervous system: 3, unless there be a brain or vicegerent for a brain? If not, if there be nothing in nerve which, as such, intuitively confers sensation? When we see an animal shrink *under* injury, are we to say, with Sir Charles Bell, that it shrinks *from* injury?—the first we see, and expect, from the irritability of its organization; the second is inferred from analogy. But what proves the correctness of the analogy? Nay, so far is analogy from assisting

(for pain implies sensation, and sensation is a cerebral function); and, secondly, that in whatever part of the brain pain may originate, it is still invariably referred to the extremity of the nerve. In the case in question, the highly sensitive origin of the injured nerve permitted a sense of pain to be felt at its other extremity; but if there had been a "circle of communication," as there clearly was not, the muscles must have been excited to move by the returning influence along their motor nerves.

The objections to a supposed "circle of communication" between motor nerves and nerves of feeling, made on the fifth and seventh pairs, apply, of course, equally to the thirty-one pairs of spinal nerves. But, apart from the inadequacy of all such experiments to prove the point, is there not something very difficult to conceive, of a nervous influence travelling from the brain on its errand to a distant organ along its motive nerve, causing that organ to move, and then whisking up again by its associate nerve of sense, bestowing feeling, back again to the brain? or, that a drop of the same identical nervous fluid should touch one nerve's feelings and excite another nerve's motions?

Sentient and motive nerves are no doubt very intimately connected. Sir

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us to this conclusion, it is plainly inimical to it; for the spinal cord and nerves are unlike the brain, cerebellum, and medulla oblongata, in having no spontaneity of action, being *conductors* of motive impulses *from*, and of sensitive impressions to, these parts. It has been recently objected, I see, by an anonymous correspondent, to Dr. Henry's statement of their being *mere conductors*, that they are, moreover, plainly subservient to the functions and structure of the vital organs, since these become deranged by extensive disease of the spinal cord, but remain unimpaired by destruction or disunion of the brain, cerebellum, or medulla oblongata." But this, which is true, does not in the least invalidate the position as to the *cerebral seat of pain*, since the functions in question are not subjects of *sensation*, being, in fact, carried on without our cognizance. Again, "all nerves have not the same powers, since a man may be insensible and motionless, and yet *breathe*." The observation is Sir C. Bell's. But if all nerves have not the same powers or office, as the case in point shews, then have we no evidence that the nerves of certain of the lower animals have a capacity for feeling; not even though we see these same animals endowed with motion, for the one endowment depending upon a different set of nerves, by no means establishes the other. Concerning the competency of ganglia to perform the offices of the brain, I have already expressed my opinion; nor should I again have recurred to it, but that I find Sir Charles Bell stating, as reported in the Lancet, that if we divide the body of the earth-worm, the *posterior* portion remains writhing and twisting, there being no associated action between its parts; while the *anterior* segment, "labouring under the impression of *pain* in its posterior part, will move away and escape"—inferring, from this experiment, that the *anterior* ganglion in the inferior animals, though small, has *superior* powers over the rest, and is, in fact, a small brain.

The following experiments, often repeated, and always with the same results, shew how my experience is at variance with that of the distinguished physiologist just quoted:—

I took many earth worms: I divided them into two or more segments, at the head, tail, or across the middle of the body; and these were the results obtained:—

1. The caudal segment of the worm twists and writhes *only* when the point of division has been considerably below the anterior ganglion; in fact, when it has occurred near the middle of the body.

2. Such twisting and writhing is temporary; and when it ceases, the motion of *each* segment becomes *progressive*, *associated*, and *similar*.

3. In other cases, where the division has been effected not very far from the head, the progressive associated action of the links occurs from the very moment of separation.

4. If the number of segments be greater than two, the *same* results occur.

5. If the worm be cut in two near the head, the head dies, notwithstanding the presence of the "superior anterior" ganglion, long *before* the caudal segment of the same worm, or before any other larger segments of worms, which may have been operated upon at the same time.

Cor. Hence this anterior ganglion is not the *officina* of sensation and motion to the rest of the body beyond the other ganglia; for if it *were*, it ought, as the depôt of sensation and motion, to *outlive* the the rest of the body; in place of which it is the *first to die*. The same is also proved by poisoning this end with some acrid substance, when the remainder of the body is found not to be less active or alive.

6. If a worm be divided into two *equal* segments, the caudal segment outlives the other.

Cor. There is, therefore, *more* vitality in the posterior half of a worm than in the anterior segment. Thus, in an eel or serpent, a blow on *the tail* goes further towards paralysing the animal than any mutilation of the head or anterior part of its body.

In other experiments, where I touched different parts of the body with solid citric acid, which instantly throws the worm into violent convulsions, and destroys vitality in a few seconds, I found that death, commencing in a part affected with the poison, gradually creeps along the body *whichever* extremity be first touched; but that death proceeds more rapidly towards the head than towards the tail, if the middle of the worm be subjected to the action of the poison.

Cor. Which fact, as also the continuity of vascular communication throughout the body apparent to the eye, seems to prove the identity and unity of the worm, and that he is not many, but one.

I may here mention, that on touching the animal's skin with the acid it becomes immediately strongly *corrugated* and slimy at the same time; that the animal writhes, and is convulsed. This circumstance by some would be quoted as an evidence of *soreness* or *pain* felt by the skin; but I would remind such objectors of Professor Weber's experiments on the sensibility of the skin, in which he shows that those portions of it sensible to the influence of *touch*, and in this respect alone the most sensitive, are by no means the same parts that are capable of the highest degree of *pain*. The sensibility to *touch*, and the sensibility to *pain*, were found frequently to bear an *inverse ratio to each other*. The first might be called the *irritability* of the skin, and must depend upon a different nervous influence from the one we are considering.

Charles Bell has shewn this; but they are not connected in this way. Indeed all idea of such a circle being necessary must be given up, if we reflect upon cases where there is a paralysis of motion, but not of power, and *vice versâ;* because in such cases the influence which communicates motion or sense from the brain can only (by the very supposition) travel in a forward and backward course, or the reverse. Sir Charles Bell had seen several patients "who had paralysis of sensation upon one side of the tongue and mouth, without loss of the muscular action;" and here, he observes, we are taught how necessary sensation is for regulating motion; since, in all those persons, food was suffered, unconsciously to themselves, to lie between the gums and cheeks, and even to putrify there." But why not attribute this accumulation of food, I would ask, to the loss of sensation of the muscle to external stimuli; by which, as in ordinary cases, and through the medium of the nerves of sensation, the mind would have been instructed where the food lay, and have effected its removal by a proper control over the voluntary muscles?—an explanation quite as adequate as that of supposing the error to originate in the mind's not being able to comprehend the state of the muscular action, and so of controlling it properly. Suppose, for an instant, the mind conscious of the motion of the lips and mouth; yet could it never direct them to remove what, from a paralysis of sensation, they could never feel. In this way, too, the occurrence of inflammation in permanent insensibility of the eye-lid, is, I conceive, to be accounted for. It is impossible to deny that "muscular motion is governed by means of consciousness or perception of that motion, without which we could not balance our bodies in walking, &c.;" but I by no means admit the inference, "that it can only be from a sense of the condition of the muscles of the hand and arm that one knows their position when they do not touch any thing, and when, therefore, the sense of touch does not guide to the conclusion." Surely it must be by the sense of touch that this perception of the condition of the muscular action is obtained—that is, by pressure *upon the nerves of sensation, consequent upon the very act of motion.* But to return from what is irrelevant: this circle of nervous communication appears to be directly disproved in all those instances where there occurs a paralysis of sensation without a corresponding paralysis of motion, and *vice versâ*; and on the other hand, I can conceive of no instances which favour such a supposition. To adopt, for example, a case by way of illustration, from Sir C. Bell. In the act of groping for a piece of money, the steps will be as follows:—1st, the will puts the voluntary muscles into motion; then, 2dly, their play makes them press upon the sentient nerves; which, 3dly, transmit this new impression to the brain; which, lastly, coins it into a sensation. Here it appears that it is not the same influence that first moves the muscles, and afterwards returns along the nerves of sense, to inform the brain how it had performed its mission; so that there appears, in fact, nothing to countenance Sir C. Bell's affirmation, that there is but one influence, motive or sensitive, according to the direction in which it is transmitted; an opinion, by the way, expressed long ago, by Petit, the learned commentator on Aretæus, who refers us to a certain book: "De motu animalium spontaneo in quo," says he, "vim movendi et sentiendi *unam* naturam eandemque esse demonstravimus."

Sounds of the Heart.

P.S.—The nature of the sounds of the heart has occupied, and is still occupying, no inconsiderable portion of the attention of the physiologist. Perhaps the obscurity in which the cause of these sounds is involved, may in some degree be removed by the following experiment. If the venæ cavæ be suddenly tied near the heart, in an animal just struck down, while this viscus is yet beating, it is then that it will speedily come to emulge its cavities, while the ingress of fresh supplies of blood from behind is effectually prevented; and by applying the cylinder in this exsanguine state of the organ, it will be easy to determine to what extent, if to any, the sounds of cardiac action depend upon the motion of the blood through the cavities, or to the reaction of the valves upon this fluid; and also how much, if at all, the contraction of the muscular fibre aids in their production.

OBSERVATIONS

ON

MR. STAFFORD'S CASES OF STRICTURES OF THE URETHRA.

To the Editor of the Medical Gazette.

Sir,

Having lately read Mr. Stafford's cases, in the Medical Gazette for 14th of June and 5th July last, I was particularly struck by the unqualified and unequivocal manner in which he states the safety with which his perforator for strictures may be used.

My own impression of the instrument, when first I saw it, was, that it was a very unsafe one, and could not be used at any part of the urethra without great hazard of wounding the sides, but more especially at the curve; and we know that a very slight division of the internal membrane is enough to be followed by great mischief, if the urine infiltrates through it.

At page 381, June 14th, Mr. Stafford positively asserts "that the operation of perforation of stricture had never been attended with the slightest injury;" and at page 479, July 5th, he says, "In conclusion of these remarks, I beg again to repeat that I have never known any mischief arise from the operation: the pain has been trifling—not more, nor even in some cases so much as the puncture made in bleeding. There has never been hæmorrhage from the cutting; no false passage made, no extravasation of urine, nor abscesses formed in consequence; nor, indeed, has there been, in any instance, a single unfavourable symptom occur. The treatment has always been attended with success, and the patients, from having been in a state of disease, being emaciated and worn out by their long sufferings, have in a short period been so relieved that they have gained flesh, and have become healthy and strong."

Now, sir, such an assertion, accompanied by the selected cases published in the Gazette for July 5, would lead many practitioners to consider this as a most safe and easy way of curing a complaint which, when it produces retention of urine, has always been considered as a very formidable one by the most experienced surgeons, and might induce many young surgeons to undertake an operation that would often disappoint them in the result, and be the cause of their patient's death. As a proof that such a result of the practice might follow, I have sent you the following case for insertion; which, at this distance of time, I should not have thought of publishing under any other circumstances, but that I think the medical public ought to be in possession of the unfavourable as well as the favourable side of the question.—I am, sir,

Your obedient servant,

M. W. Andrews.

Arlington-Street, Oct. 9, 1834.

Case.—J. A., an army surgeon, had suffered from the effects of strictures in the urethra upwards of thirty years, the last seventeen of which he passed in India, during which time the symptoms increased to a very distressing degree; and he informed me he had, on many occasions, taken long marches with a catgut bougie secured in the urethra, which he could seldom pass further than six inches from the external orifice. He also informed me that he often applied the argentum nitratum (himself) to a stricture at $2\frac{3}{4}$; which he found relieved spasm, and generally induced the urine to pass more freely.

Before I saw him, he had been under the care of a very experienced hospital surgeon for upwards of six months; who, he said, had applied the caustic upwards of sixty times, without his having derived any benefit. On the 9th November, 1827, he first consulted me; at which time he was in a state of great general irritation, and could only pass urine by drops, or in a very fine stream, with great straining and pain. He was constantly introducing a small catgut bougie, and was obliged to take frequent doses of opium, to relieve spasm of a most painful nature. This long-continued state of suffering had rendered him very nervous and extremely irritable, amounting sometimes to delirium, and often (he said) made him doubtful of being able to resist the temptation of putting a summary end to his sufferings.

On examining the urethra by a bougie of the size that the orifice would readily admit, I found that it would not pass further than one-fourth of an inch; and on introducing one full three sizes smaller, it was arrested at $2\frac{3}{4}$.

It was to this stricture that he had so

frequently passed bougies armed with lunar caustic, and sometimes with kali purum; but never succeeded in getting armed bougies beyond that point, and from the frequent introduction of them had completely blackened the orifice.

I told him it would be in vain to expect any benefit until the first stricture was rendered pervious to a bougie of a size that the orifice would readily admit; to effect which, I applied the argentum nitratum, and requested him not to irritate the parts by the introduction of the catgut bougie, which, from being used for two or three times, became rough.

This, however, he had been so long accustomed to do on the slightest irritation, that he could not be persuaded to refrain from it. In addition to the repeated attacks of local irritation, his constitution had suffered considerably, and he had frequent paroxysms of rigors, succeeded by the hot and sweating stages. These occurring frequently during the treatment, caused several delays, and intervals of a week or ten days between the applications; and having, on the 2d December, had a very severe attack of irritation, accompanied by rigor, and constant desire to make water, which only passed by drops, attended with extreme pain, I proposed the puncture of the bladder through the rectum, and thereby establish an artificial outlet for the urine; and, by thus relieving the urethra of one material source of irritation, allow the treatment of the strictures to be persevered in with a greater prospect of success.

Having punctured the bladder under similar circumstances on four different occasions, (one of which was in June of the same year, and published in the London Medical and Physical Journal for November *), and all with perfect success, I could with confidence recommend the operation; and after explaining to him my reasons, he readily consented; but whilst I was gone home to get the trochar, a medical friend called on him, who, being informed of my intention, dissuaded him from having it done, and excited great alarm in his mind both as to the immediate effects and future consequences of such an operation, telling him, that if it succeeded in affording him relief, the wound in the bladder would remain open, and he would be a dribbler through life, and consequently could have no enjoyment in society; and recommended that another opinion should be taken on his case before he submitted to my proposition.

I was, therefore, requested to make an appointment with a gentleman, an hospital-surgeon of great celebrity, which I was most happy to do, and we met at eight o'clock that evening. The result of our conference was, an objection on the part of my colleague to the proposition. It was proposed by him to divide the strictures with an instrument, constructed on the same plan as Mr. Stafford's, only straight instead of curved, as being best adapted to the situation of the stricture; the handle of the instrument was graduated.

The whole treatment of the case was now placed in this gentleman's hands; and on Sunday, 23d December, he divided the stricture nearest the orifice with an instrument of his own invention, which he had often successfully used in cases where the external orifice had become contracted, and the parts were kept from reuniting by the frequent introduction of a metallic bougie down to the second stricture: a few drops of blood only followed the division of this stricture. He experienced great relief after this operation, and thus far every thing was very promising.

On Sunday, 30th, having first accurately measured off the distance on the graduated scale, and adjusted the lancet to the extent it was intended to protrude through the canula, the instrument was passed down to the obstruction, and the lancet pushed gently forward two or three times, advancing the canula as the stricture was divided. The pain, however, was so severe, (in consequence of the large size of the canula, which was with difficulty passed down to the stricture), producing large drops of perspiration over his whole body, that it was thought right to withdraw the instrument, and lay the patient on his bed, to prevent actual fainting. Nothing more was done that day; but it was proposed to complete the operation on the following day with an instrument of a smaller size. Very little blood followed; an opiate was given, and he was put to bed.

The pain he experienced at each time the urine passed during the remainder of that day and night was very excruciating; and on the following morning

* *Vide* London Medical and Physical Journal for November 1827, p. 397. See also other cases in the 2d edition of my work on Strictures.

there were swelling and an erysipelatous blush over the pubes, with acute pain and great tenderness, which extended down to the perineum; but there was no swelling or pain at the seat of the stricture. Leeches and fomentations were applied, and his bowels freely evacuated, by which means the symptoms were greatly mitigated, but never wholly subdued.

In a few days he had irregular rigors, sickness, and hiccup. The stomach became so irritable as to reject every thing. He became comatose, and on the 11th January, 1828, died at 8 P.M.

Appearances on dissection the following morning.—On laying open the abdomen, dividing the integuments over the pubes, and removing the skin from the penis, the parts presented a complete state of gangrene. The left corpus spongiosum urethræ was in a gangrenous state, and the left crus penis nearly destroyed. Slitting open the urethra, the stricture, at $2\frac{3}{4}$ inches from the orifice, was found to have been nearly divided through its whole extent, which was about three-quarters of an inch; but so small was the opening by which the infiltration of urine had taken place, that it could not be detected; probably the state of the parts contributed to the obscurity of it. There could be no doubt, however, but the whole of the mischief had been produced by that cause.

There was another stricture at the membranous part of the urethra, which was of the usual extent, rather more than a line, and would probably not have formed any impediment to the passing of the catheter, had the other stricture been perforated through its whole extent.

The bladder, as might have been expected, was in a very diseased state, as was also the liver; and the mucous membrane of the stomach was thickened and inflamed, or rather much injected.

REMARKS.—In this case, every evil that could have been apprehended *à priori*, from the use of a cutting instrument in a part like the urethra, where the eye cannot direct, took place; and as the operation was performed by an hospital surgeon whose experience and abilities are unquestionable, and who used the greatest possible precaution, by first measuring off the exact distance from the external orifice, and setting the lancet so that it should not be protruded further than he thought necessary, the failure cannot be attributed to want of care or unskilfulness of the operator, which, had it been done by a person of less experience and practice, might have been considered to have been the case.

At page 133 of Mr. Stafford's book, this case is given; but the fatal termination is ascribed by the author to other causes. There is no doubt that the subject of this case must have eventually fallen a victim to his complaints (as many others have) if nothing had been done to relieve him; but it appears to be equally indisputable, that the immediate cause of his death was "the operation."

In reading Mr. Stafford's book, it would appear that on many occasions he has been successful in the use of his instrument; but the statement of his cases by no means justifies the unqualified encomiums he passes on it.

Case I. page 93, is one in which leeches had been applied several times previous to the operation, by which we should have expected the patient would have been so well prepared as not to have exhibited inflammatory symptoms after it; notwithstanding which we find that inflammation did follow, requiring a repetition of them twice to the perineum, and once to the groin; and we are informed that the man eventually left the hospital *nearly* cured.

Cases II. and III. pages 99 and 103, also required leeches to subdue inflammatory symptoms after the operation.

Case IX. page 122, is one in which infiltration of urine actually took place; "the symptoms became more alarming; both testicles swollen, and actually painful;" "perineum tense, and acutely painful on pressure," which symptom did not give way till "an incision had been made down to the urethra, and about a table spoonful of pus escaped." Pus and urine continued to be discharged from this opening for several days.

In the case of Sir Herbert Sawyer*, where the post-mortem examination is described by Mr. Stafford, we find "a newly-made canal terminating in a blind extremity, which was about three-quarters of an inch from coming out of the urethra on the other side of the stricture;" and this, as Mr. Stafford says,

* Med. Gaz. June 14, 1834.

"no doubt was produced by the perforation of the lancetted stilette, or urethral perforator."

We have here a complete contradiction (in Mr. Stafford's own words) of the assertions he has made. How he can reconcile this discrepancy, I must leave for him to explain.

CASE OF APOPLEXY, WITH DELIRIUM TREMENS.

To the Editor of the Medical Gazette.

Sir,

Should you consider the following case of apoplexy, with delirium tremens, of sufficient interest for insertion in your valuable publication, it is much at your service.—I am, sir,

Your obedient servant,

William Robbs.

South Terrace, Grantham,
Oct. 7, 1834.

Mr. R., aged 36, of middle stature, inclined to be corpulent, with rather a large head and short neck, has been for years in the habit of drinking large quantities of spirituous liquors, generally a bottle of brandy a day, besides wine; and some days much more. Has several times been afflicted with disease. For this last year he has not taken his accustomed exercise, but led a very sedentary life, still continuing to take large quantities of animal food, and indulge in his usual dram-drinking. He has been rather deaf for some years; latterly his deafness increased, and his memory at times appeared to fail him; he has also been more irritable in his temper. A few days previous to the attack of the following disease, he had changed his liquor from brandy to gin; and the latter always, when in health, affected him more than the former. On the 24th of September he was much intoxicated from both liquors; the exact quantity he drank is not known. On the 25th, the day of the attack, he complained of a violent pain of the head, and took but little food, and not more than half his usual quantity of brandy. About 8 o'clock P.M., whilst asleep on the couch, he suddenly fell down in a fit of apoplexy, was quite insensible, breathing with difficulty, at the same time blowing with violence a viscid mucus, tinged with blood, from the mouth and nose; the pupils of both eyes were fully dilated, and did not contract on the approach of a strong light; the pulse was slow, oppressed, and beating about 84 in the minute; the action of the heart was performed with great labour; the temperature of the skin, except about the head, was below the natural heat, with profuse perspiration. He was seen immediately on the attack by a medical friend, Mr. C. Arnold, who, on my arrival, was proceeding to bleed him. About thirty ounces of blood were taken from a large orifice from the median vein of the arm before sensation returned, or the stertorous breathing was relieved. From this sudden abstraction of blood the pulse became more expanded, beating 120 times in the minute. After a short time he became conscious, recognized his friends, and with assistance was able to walk to bed. He expressed himself relieved, but complained of violent pain about the back part of the head; he attempted to utter many words which he was unable to do, from partial paralysis of the muscles of the larynx.

℞ Hydr. Submur. gr. v. 2da quaque hora sumendum.

℞ Magnes. Sulph. ℥ ij.; Ol. Crotonis, ♏ss. (solve ex Spt. Rect.); Tr. Sennæ, f.℥ij.; Mist. Camph. f. ℥ix. Fiat haust. 3tia quaque hora sumendus. Applicetur Empl. Lyttæ nuchæ.

10 o'clock P.M.—Was called hastily, in consequence of a relapse into another fit similar to the last. Both pupils were more contracted; the pulse became slower, and the action of the heart appeared to be performed with great difficulty.

Repet. detractio sanguinis ad f. ℥x. Sinapisms to be applied to the pit of the stomach and to the lower limbs.

Shortly after the last blood was taken away, and as soon as the sinapisms began to act, he again became conscious, and appeared relieved. I then left him, giving the attendants directions to continue his medicines.

Sept. 26th, half-past 1 o'clock A.M.—He again relapsed into his former state; the pulse was about 130 in the minute; the carotids and temporal arteries were beating violently; the pupils of both eyes were much more contracted and insensible to light. The friends of the patient becoming greatly alarmed, and the symptoms appearing very slightly relieved, I requested the assistance of

my friend, Dr. Turner, who promptly attended; and it was agreed, in consultation, that ten ounces more blood should be withdrawn, the patient's head shaved, an evaporating lotion constantly applied, and to persist in the remedies already prescribed.

5 o'clock A.M.—Dr. Turner and myself met in consultation. We found the patient awake; he recognized us, and was conscious of what was going on in the room. The bowels had been freely relieved of dark evacuations; the pulse was about 140 in the minute.

Pergat.

10 o'clock A.M.—The patient had been asleep; he appeared now quite sensible. He complained of griping pains of the abdomen. There was still hesitation in his pronouncing certain words. No pain of the head, but considerable uneasiness about the liver and spleen. The tongue was moist and rather white; the pulse 120, full and soft.

Cont. Pulv. 4ta quaque hora cum haustu sequente.
℞ Dec. Aloes Comp. f. ℥j.; Vini Colch. f. ℥ss.; Mist. Camph. f. ℥ss. fiat haust.

7 o'clock P.M.—He appeared better, and had no relapse during the day.

Pergat.

27th, 10 o'clock A.M.—Had passed a comfortable night; there was slight ptyalism; bowels freely open; he complained of no pain save of the mouth and teeth; great thirst; tongue moist and rather white; pulse 100 in the minute, and soft.

Ordered to discontinue his powders. Continue the draught.
℞ Sodæ Sub-boratis, ℥iv.; Mellis, ℥ss.; Aquæ Distil. f. ℥v. fiat gargarismus, sæpe utendus.

6 o'clock P.M.—He appeared going on well in every respect.

28th, half-past 10 o'clock A.M.—Complained during the night of slight illusive visions, and was unable to get to sleep before dawn; after that he slept well between three and four hours. After he awoke he was perfectly collected, said he felt refreshed, and with the exception of his sore mouth suffered no pain. During yesterday he could not be prevailed on to take the quantity of brandy prescribed; the tongue was moist and clean; the pulse 110, and feeble.

Ordered to take an increased quantity of spirit, and beef-tea strongly spiced.
℞ Spt. Ammon. Arom. ℥xl.; Decoct. Aloes Comp. f. ℥iij.; Mist. Camph. f. ℥ix. fiat haust. 3tia quaque hora sumend.
℞ Hydr. c. Creta, gr. vj. vespere sumenda cum haustu sequente.
℞ Solut. Morph. Mur. ℥xl.; Aquæ Distil. f. ℥j. fiat haustus.

8 o'clock P.M.—I was summoned hastily to meet Dr. Turner, in consequence of the patient declaring he was dying. On our arrival we found him sitting up on the bed, with an expression of great anxiety. The skin was cooler than natural, covered with a profuse perspiration, and the tongue moist, covered with a white fur. Pulse 100, and feeble. He complained of no bodily pain, but said he felt certain he was dying.

Ordered to take brandy and sago frequently.
℞ Pulv. Opii, gr. v.; Hydr. Subm. gr. iij. ft. pil. st. s.
℞ Pulv. Opii, gr. j.; Gum. Camph. gr. iij. fiat pil. 3tia hora cum haustu sequente, sumat.
℞ Amm. Carb. gr. v.; Tr. Valerianæ, f. ℥j.; Aq. Menth. P. f. ℥j. fiat haustus.

Half-past 10 o'clock P.M.—The patient presented all the symptoms of delirium tremens in a more decided manner. There was continued agitation of the extremities and whole body; the ravings were incessant, and very violent. When we attracted his attention he was able to recognize us, but immediately relapsed on the same subject. The skin was cool, and covered with a profuse perspiration.

Ordered to take a pill every hour, alternately with brandy and water and the draughts; and to have the following liniment rubbed over the pit of the stomach:—℞ Linim. Amm. ℥j.; Morphiæ Mur. gr. iij. ft. Linim.

29th, half-past 3 P.M.—The delirium continued with the same degree of violence; he had taken twelve grains of opium without the slightest effect; the pulse was more feeble, and the tongue and mouth more dry, loaded with viscid mucus.

Ordered to continue his brandy, and to take Tr. Opii, ℥xx. 2da hora.

9 o'clock A.M.—Still continued in the same delirious state; pulse more feeble, and increased in frequency; tongue more dry and becoming very brown.

There appeared to be a disposition to sleep.

℞ Tr. Opii, ℥xx.; Tr. Valerianæ Am. f. ʒj.; Mist. Camph. f. ʒix. fiat haust. 2da hora capiat.

Noon.—He was in a disturbed sleep, having great difficulty in breathing, with a mucous rattle in the trachea, and constantly moaning.

5 o'clock, P.M.—He had awoke, and, after much exertion, expectorated some viscid mucus. He took a small quantity of brandy, with water, and again fell into a comatose state. The breathing was performed with great difficulty, and the mucous rattle continued. The pulse was very feeble, and appeared to be a continued stream.

9 o'clock, P.M.—Had been gradually getting worse since our last visit. He appeared conscious, but was unable to swallow. From this time he sunk rapidly, and died about midnight. There was no postmortem examination.

Cases similar to the one just related, are, unfortunately, of frequent occurrence in private practice; and I know of no disease more difficult to bring to a happy termination than apoplexy in an individual who is not only a free liver but also a free drinker of spirituous liquors; for in every case of apoplectic seizure, the medical attendant is imperitively called upon to take blood, and not a little, but to continue till some appearance of returning sensation is made visible; and as certain as reaction takes place, almost so certain will the sequel be "delirium tremens."

It will be observed in the preceding case that blood was taken with considerable caution; so much so that venesection was had recourse to three different times, and the amount that was necessary to be extracted before the patient was relieved from immediate danger, was no small quantity. The patient slept heavily after this loss of blood; his breathing continued stertorous, and there appeared no impropriety in these active measures, but the reverse; indeed, the day following, the patient was surprisingly recovered; he complained of no pain, uneasiness, dizziness, or other uncomfortable sensation of the head, but referred his complaints to the abdomen. The night following he passed in comfortable and refreshing sleep. On the second day appearances were favourable, but on this day he refused to take brandy, and could not be prevailed on to do so. During the night following he had slight visions, and a dread of going to sleep; still, however, after break of day, he slept several hours, and when he awoke he appeared collected and refreshed. It was not till Sunday evening the delirium assumed its true form, and we considered the previous restless night to be owing to the patient's not taking sufficient stimulus during the preceding day; and he was therefore ordered to take an increased quantity. On the Sunday evening there was no doubt about the nature of the existing malady, and however inimical opium may be to an apoplectic patient, it is our only remedy when that patient is suffering from delirium tremens.

It will be observed that about sixty hours elapsed after the abstraction of the last blood, before decided symptoms of delirium came on. I have more frequently found it about twenty-four or thirty-six hours after venesection; but I think it questionable whether the patient, omitting to take any stimulus after being accustomed to large quantities, might not be as great an exciting cause of the delirium as the abstraction of blood itself.

It is very manifest, from the history of this patient's life, that his constitution was completely broken up from hard drinking; and that, when once attacked with a violent disease, there would not be a chance for his recovery.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

An Inquiry into the Nature of Sleep and Death; with a View to ascertain the more immediate Causes of Death, and the better Regulation of the Means of obviating them. Republished, by Permission of the President and Council of the Royal Society, from the Philosophical Transactions for 1827-29-31-33, *and* 34; *being the concluding part of the Author's Inquiry into the Laws of the Vital Functions.* By A. P. W. PHILIP, M.D. F.R.S.L. & E. &c.

THE Philosophical Transactions are so little in the hands of the members of our profession, that there is ample room for the republication of the papers relating to it. The particular nature of the pub-

lication before us induces us to give an earlier notice of it than we should otherwise probably have done. It is surprising that, in such an age as the present, physiology, although (as the author observes in his Introduction) forming, with anatomy, the basis on which the science of medicine rests, should be so little cultivated by the members of our profession. It is rare, even in the medical journals of this country, to see a correct account of a physiological work, which includes any thing beyond the more superficial parts of the science; and we often find the reviewer giving the most decided opinions, which only shew how ill entitled he is to give any opinion at all on the subject.

Our limits will not admit of our giving an analysis of all the papers republished in this volume. It is several years since the first five papers appeared; one of the most important of which—that on the powers of circulation—we republished at the time of its appearance. These essays, however, were only preparatory to the two last papers, which form the chief subject of the publication—those on the nature of sleep and death. Of the former of these we put our readers in possession, as well as expressed our opinion of it, by republishing it at the time it appeared in the Philosophical Transactions. The paper on death is too long for republication, but we shall here give such quotations from it as will, with the intervening observations, make the reader acquainted with its general contents, and also with the leading features of the preceding papers, on which it is in a great degree founded, as far as they are necessary for understanding what we shall say of this paper. We shall begin by quoting the author's account of the general principles on which his theory is based, and his recapitulation of the different forms of death.

"In the last of the papers above referred to," he remarks, "I had occasion to observe that there is no question relating to the animal economy which involves a more general view of its phenomena than the nature of sleep. The nature of death also includes a general view of the functions of health, for such we shall find are the laws of our frame, that these functions alone necessarily lead to death; but the nature of death is a more complicated question. It includes the various ways in which the functions are influenced by disease, the effects of which are so numerous that they seem at first view a train of countless phenomena which defy all attempts to refer them to general principles.

"I need not say that many advantages would arise from a correct knowledge of the immediate cause of death, and of the different sources from which the state that constitutes that cause arises. The most important would be, that it would give to the physician a clearer view of the tendencies of disease, and consequently of the indications of cure; but it would not be the least of its advantages, that it would tend to strip a change which all must undergo, of the groundless terrors with which, we have reason to believe, the timid and fanciful have clothed it."

* * * * * *

"Such is the natural decay of our frames, but, as I have already had occasion to observe, it is very rare for it to run its course uninterruptedly, particularly in civilized life. It is almost always disturbed by adventitious causes accelerating it, or the decay of particular parts, which, in consequence of the mutual dependence of the various functions, disorders the whole. Although these causes are of infinite variety, the laws of our frame are limited, and therefore many must operate on the same principle. This leads us to believe, that, however varied the causes of disease, it may be possible to reduce their more ultimate effects to a few general heads. The exhaustion of the sensitive system, for example, is of the same nature, whatever be the cause of excitement; and other forms of debility, affecting either the sensitive or vital system, cannot be very various, however various the causes which produce them. We have reason to believe that the endless variety of disease depends more on the peculiar nature and functions of the different organs affected, and the peculiar manner in which different causes affect them, than on any great variety in the states which constitute the more immediate causes of death. However various the effects of disease, there must be but a few points to which they all tend, because the last in the chain of causes which produces what is called death, we shall find, is always the same, and seated in the same parts. On these principles we may hope to reduce the effects of the adventitious causes of

death to a few heads, and thus to obtain such a view of the subject as shall enable us to traee the nature, and consequently the operation, of the eauses of our decay in individual instances, and therefore to perceive more clearly the operation of the means which tend to counteract them. In the prosecution of the subject, I shall eommence with those eauses of disease whose operation most resembles that of the wholesome stimulants of life; and in pursuing, by means of the various experiments whieh tend to unfold the laws of animal eeonomy, the consequences of these eauses, we shall be led to the effeets of such as have nothing in common with them."

* * * * * *

" We have seen that the forms of death—for, as I have already had occasion to observe, the whole operation of the causes of deeay, in strict language, constitutes the act of dying—may be arranged under five heads.

" 1. The only natural death, that from old age, where all the powers of life, in eonsequence of the operation of the agents whieh excite their organs, gradually decline, and death is only the last sleep, characterized by no peculiarity, in which these powers, partly from their own deeay, and partly from the lessened sensibility inereasing the diffieulty of restoring the sensitive system, beeome incapable of this office, in consequenee of which the individual awakes no more; for it is to be reeolleeted that it is not in the commencement, but in the progress of the last sleep, that what we call death takes place. In its commencement we have seen, the sleeper may always be roused by stronger stimulants than those which preeeded it.

" All the other forms of death, it appears from what has been said, may be regarded as more or less violent, some adventitious cause disturbing the natural process. They were divided into two elasses; in the one the offending cause makes its impression on the sensitive, in the other, on the vital organs. The former were divided into those cases in whieh the debility whieh precedes the total loss of sensibility arises from the excess of the stimulant operation of the offending cause, and those in which it is the direct effeet of that eause; the latter into those eases in which the vital powers fail in consequenee of their organs beiug deprived of the stimulants which excite them, and those in which the offending cause makes its impression on these organs themselves, the power of which, analogous to the operation of the offending cause on the sensitive organs, is destroyed, either by the excess of its stimulant, or its more directly debilitating operation, according to the nature or degree of that cause. Thus are induced,

" 2. The death whieh in its nature most nearly resembles the death of old age—that from exeessive exhaustion of the sensitive system, from the operation of stimulants of greater power than this system can beai, notwithstanding the intervals of sueh imperfect repose as their continued operation admits of, without the supervention of disease; which, not being capable of relief from the continued action of the vital parts of the brain and spinal marrow, by sympathy spreads to them, the affeetion of eaeh system increasing that of the other, till all the powers of the sensitive system are destroyed.

" 3. The death in which disease of the sensitive system arises, not from causes over exciting, but directly debilitating it: the debility they produce being of the same nature with that from exeessive enciteiment, and running the same course as in the second stage of the preceding form.

" 4. The death whieh arises from the privation of the natural stimulants of the organs of life; and lastly,

" 5. That whieh arises from diseased states of those organs, analogous to the states produced in the organs of the sensitive system by the causes which make their impression on them.

" If the foregoing include all the modes of decay, the physiological nature of death, in its various forms, is referable to very simple principles. In the natural decay, the exeitability of the organs of both the sensitive and vital systems is gradually impaired by stimulants, which, whether existing within our bodies or making their impression from without, belong to inanimate nature; for it is by the impression of sueh stimulants alone that the functions of life are maintained. In the different kinds of violent death, with the exception of the death which arises from a failure of the natural stimulants of the vital organs, whieh is comparatively rare and extremely simple in its nature, we find the excitability of one or both of these systems, or some parts of one or

both of them, capable of influencing all the others, more quickly destroyed by the continued operation of causes, which either stimulate beyond the limits of health, or applied beyond the limits of their stimulant operation, destroy the powers of life, either by directly destroying the powers of the sensitive system or depriving it of those powers by which it is maintained. All these causes, it is evident, tend to the same effect, the extinction of the sensibility, which constitutes death according to the common acceptation of the term, the immediate cause of which, therefore, exists in the sensitive part of the brain and spinal marrow."

In his paper on Sleep, the author adduces facts to prove that the functions of the sensitive and vital systems are regulated by different laws; the latter in no degree partaking of the exhaustion which constitutes sleep, the immediate cause of which, therefore, is confined to the sensitive system.

It appears, from many facts referred to in the paper before us, and in the papers which precede it, that the only dependence of the vital on the sensitive system, is for the change effected in the blood by respiration—the only function, properly termed vital, to which the co-operation of the sensitive system is necessary; and consequently that it is through this function alone that the vital system is influenced in sleep, an opinion, as appears from what is said in the paper on sleep, equally supported by the phenomena of sleep themselves. In proportion as the sensibility is lessened in sleep, respiration (which, in the fifth paper, on the relation which subsists between the nervous and muscular systems, is shewn to be altogether an act of volition) is rendered slower, and, in consequence, the organs of the circulation, and other vital functions which depend on it, are less readily excited. But while health continues, the change is in their excitement alone, their power remaining unimpaired.

By their means, the due excitability of the sensitive system is gradually restored during sleep, again in a short time to be exhausted by the usual stimulants of life.

Thus it is that although the sensitive system is restored by the continuance of the vital functions in sleep, the constant recurrence of its exhaustion at length enfeebles its powers; and as the interrupted excitement of the sensitive system tends to lessen its excitability, the continued excitement of the vital system, as we might *à priori* expect, has a similar effect with respect to its excitability. Thus, as we advance in life, the sensitive system is less easily restored, and the vital system becomes less capable of restoring it, till at length, the task being beyond the remaining powers of the latter, they fail in the attempt.

Such is the death of old age, which, depending on a gradual decay, necessarily takes place at the time when the functions of the vital system are performed with most difficulty—that is, under the disadvantage of a diminished frequency of respiration, caused by the exhaustion of sleep.

All other modes of death depend on adventitious causes, the more immediate effects of which are infinitely varied, but which, as appears from the results of many experiments, all tend to one change, which constitutes what is called death—namely, the loss of power in those parts of the brain and spinal marrow which are associated with the nerves of the sensitive system; in consequence of which the sensibility, and consequently the respiration, are destroyed.

It also appears from the experiments just referred to, detailed in the author's Inquiry into the Laws of the Vital Functions, that what is called death is but the conclusion of the first stage of the process of dying; for he found that after it, all the vital functions, respiration alone excepted, still continue, but cannot, in the more perfect animals, long survive the loss of sensibility, which is effected in the various ways enumerated in the recapitulation given above; for the illustration of which we must refer to the treatise, where the causes and nature of each are considered at length.

"All modes of death (the author observes), with the exception of the death from old age, may be regarded as more or less violent; but in considering their nature, we must not confound the last act of dying with the suffering which precedes it, and which is often no less when it terminates in recovery than in death, which equally relieves it; and as death, in the usual acceptation of the word, from whatever cause it arises, consists in the loss of the sensorial functions alone, the act of dying is, in this respect,

in all cases essentially the same. In all my experiments I found the nervous and muscular surviving the sensorial functions *.

"When the animal no longer feels and wills, he is what we call dead; but for a certain time the motion of the blood in every part of the system still continues, and all the assimilating functions still go on, as may be demonstrated by dividing the vital nerves immediately after death, which produces the same change of structure in the organs supplied by them, though in a less degree, as during the life of the animal †; and that all this would be the case, a knowledge of the animal economy would have told us, independently of the aid of experiment, if we could, without this aid, have acquired it.

"The removal of the sensorial powers neither destroys the muscular power nor deprives the muscles of involuntary motion of the stimulus which excites them. The heart, indeed, is incapable of its function, because, from the interruption of respiration, its left side is no longer supplied with the kind of blood which is its natural stimulant; and the accumulation of the blood in the lungs, from the same cause, affecting a great proportion of its vessels, prevents the right side from emptying itself. These are the necessary and almost immediate effects of the interruption of respiration; but the change in the blood of all the capillaries, with the exception of those which belong to this class of vessels, necessarily takes place more slowly. A certain time must always elapse before the stoppage of respiration greatly affects it. It has been sent to these vessels more or less in its proper state, and it still finds its vessels capable of being influenced by their usual stimulant ‡. Thus, as I have ascertained by many experiments, the motion of the blood continues in these vessels for several hours after respiration has ceased—that is, as long as the blood can be drawn from the larger arteries, the cause of these arteries being found empty after death §.

"But this is not all: the nerves of the ganglionic, as well as cerebral system, retain their power for a certain time after the supply of that power from the brain and spinal marrow has ceased*. The blood, therefore, still finds the secreting surfaces more or less in a state capable of their functions; and the secreting processes, as I ascertained by frequently-repeated experiments, still go on †. Nor is even this all; for the brain and spinal marrow depend, for their functions, on the same powers as other organs; and I found, by an experiment made on so large a scale that it was impossible to be deceived in the result, that there is an actual supply of nervous influence after the sensorial functions have ceased—that is, after what is called death ‡."

In considering the various adventitious causes of death, we have seen, the author begins with those, the operation of which most resembles that of the usual stimulants of life; and in pursuing the effects of these, he is led to those which have nothing in their effects in common with those stimulants; for the stimulant operation of agents, if either too powerful or too long continued, produces the same state, which is their more immediate effect when they are applied in such quantities as act as sedatives, any degree of which is inconsistent with the functions of health; the sedative effect being of the same nature, and equally a state of disease, whether arising from the excessive application of stimulants or the more direct effect of the offending cause. All agents capable of influencing the living animal, may act either as stimulants or sedatives, according to the degree in which they are applied. It would appear, from a passage referred to in the author's Inquiry into the Laws of the Vital Functions, that whether the agent makes its impression on the mind or body, there is no exception to this law. Our limits do not permit us to follow the author in the various ways in which the functions are influenced by diseases, and the sympathies which so extensively influence and are influenced by them. Having enumerated them, he proceeds—

"Such, in different cases, is the va-

* Experimental Inquiry, Part II. Chap. xi. Wherever this Inquiry is referred to, the references are to the third edition.

† Ibid. pp. 175, 176. compared with a paper which the Society did me the honour to publish in the Philosophical Transactions for 1827, entitled, Some Observations on the Effects of dividing the Nerves of the Lungs, &c. the second paper in this volume.

‡ Philosophical Transactions for 1833.

§ Experimental Inquiry, Part II. Exp. 66. & 67.

* See the observations on the experiments which prove the evolution of caloric from the blood after what is called death, in the second part of the Inquiry just referred to.

† Ibid. Experiments 65, 69, 70.

‡ Ibid. Experiment 65.

ried course of our decay previous to the moment at which the sensibility is extinguished, emphatically called that of death, because it completes the decay of the sensorial powers, and leaves us only those which we possess in common with the vegetable world; for the vegetable, like the animal, can convey its juices, from its secreted fluids, and in some instances move its limbs, if proper stimulants be applied; an additional argument, it might be shewn, if any were required, for all such functions being the effects of inanimate agents acting on living parts.

"After the removal of the sensorial functions, none remain to us but such as are maintained by the immediate action of those agents. Our bodies are hastening to be mingled with the matter of inanimate nature. They retain only those powers which immediately depend on its agents, and these are rapidly failing, because, for reasons which have been pointed out at length *, the due application of those agents in the more perfect animals, cannot long survive the loss of the sensorial powers.

"The power of organizing the elements of inanimate nature belongs, and some have supposed exclusively, to the vegetable world; but as we see plants, the mushroom tribe, possessed of no organizing power, and therefore, like animals, nourished only by matter already organized, some of the lower species of animals, on the other hand, seem to possess this power. Thus it would appear that there is a class of animals and of plants in which the animal and vegetable, in this essential respect, exchange their natures. As the animal becomes imperfect, and approaches the nature of the vegetable, the sensorial powers dwindle, and the lowest animals appear to extract their nutriment from air and water, which, being generally diffused, are at hand, and consequently obtained without any sensible effort on the part of the animal. His life, therefore, although not independent of the external world, is, like that of the vegetable, independent of any act of volition. As we rise in the scale of animals, the sensorial powers increase, and, in the same proportion, become more essential to existence. From those animals which obtain food without any act of volition, we come to those who can only obtain it by such an act, but who still, without any act of this kind, obtain the influence of the air, yet more immediately necessary to their existence. We arrive at length at the most perfect class, which can neither obtain food nor air, except by an act of the sensorium. In them the sensorial power is as necessary for the inhalation of air, as the ingestion of food. When sensation ceases, they as certainly cease to breathe as they cease to eat. Thus it is that in this class of animals the due application of the inanimate agents on which life depends, cannot long survive the loss of the sensorial functions.

"As we have been enabled, by the aid of the experiments referred to in the foregoing paper, to trace the steps by which the sensibility in the various forms of death is extinguished—that is, of our decay up to that moment which has, for very evident reasons, obtained the name of death—by the same means we may with more ease trace the steps by which the remaining powers of life are extinguished.

"As the powers of life fail, we have seen, the first functions which cease are those which wholly depend on these powers. The others, being the results of inanimate agents acting on vital parts, continue as long as those agents are supplied, for the purpose of exciting their organs. The first of these powers which fails is evidently the power of the capillary vessels, because their function continues as long as any blood can be supplied to them from the larger arteries. The circumstance of the action of the capillaries only ceasing when tho larger arteries are empty, affords a proof that the assimilating processes, without which their power would fail, are still more or less in a state of activity. These processes, we have seen, are immediately dependent on the vital parts of the brain and spinal marrow. The due mechanism of every part, it appears from direct experiment, depends on the action on the blood of the agent they supply. When the capillaries can no longer supply the blood on which it acts, it is evident that the functions of this agent must cease, and consequently that those parts of the brain and spinal marrow by which it is supplied, being thus deranged, their powers must cease also.

"These are the last of the powers of life which fail, and thus the body of the more perfect animal is left subject to the

* The first paper in this volume from the Philosophical Transactions for 1829; and Experimental Inquiry, Part II. Chap. xi.

laws of inanimate matter. The first functions which cease are those of the sensitive parts of the brain and spinal marrow; the last, those of the vital parts of these organs*."

In the rapid view we have taken of the paper before us, we have been obliged to pass in silence discussions into which, had our limits admitted of it, we should have entered, and to some of which we may probably, in a future number, recur; such as that respecting the state of the body in suspended animation, and the suggestions for improving the modes of treatment in it; the discussion respecting the cause of the growth of the body, and the circumstances which determine its period in each individual; and that respecting the general laws of the animal economy, and particularly the identity of voltaic electricity, and the agent on which depends the secreting and assimilating processes, which the author has for so many years maintained, and in support of which adduced so many experiments; an opinion which gains much additional support from Dr. Faraday's doctrine of electro-chemical equivalents; a doctrine which he so strikingly, and we must add convincingly, illustrates in his papers in the same part of the Philosophical Transactions which contains Dr. Philip's paper on the nature of death, and from which it would appear that all chemical changes are necessarily the effects of electric action.

In an appendix, the author republishes two papers which appeared in this journal, in reply to some strictures in Dr. Prout's Bridgewater Treatise.

* In the first of any of the more perfect animals, unless the nervous influence be supplied from without, the rudiments of the organs which supply it and those of the sanguiferous system must have been simultaneous creations, because neither is capable of producing the other, the functions of each being inseparable from those of the other. But we have seen that it is a necessary inference from direct experiment, that while the vital principle is unimpaired, the powers of circulation, provided the blood be duly exposed to the influence of the air, are, with the aid of voltaic electricity, capable of all the assimilating functions. No other powers are required for the maintenance and growth of the animal body.

We have reason to believe that the vital parts of the brain and spinal marrow may, like the lungs, be inactive in the fœtal state, some other means in this state being employed to supply an agent, which after birth can only be supplied by them. Well-grown fœtuses, perfect in all their other parts, have been born without either brain or spinal marrow. The growth of such fœtuses must depend on the same causes as the growth of other monstrous productions in the uterus — namely, as far as relates to the brain and spinal marrow, on the powers of the mother alone; how applied, it is impossible for us to say.

MEDICAL GAZETTE.

Saturday, Oct. 18, 1834.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

MEDICAL RESPONSIBILITY— CONCLUSION OF THE *AFFAIRE THOURET-NOROY.*

IT is pleasing to observe the *esprit de corps* with which the medical men of Paris have been animated throughout the whole of this affair. Having been appealed to by their unfortunate *confrère*, they assemble immediately in great numbers, express their sympathy, make up a handsome subscription, and write a letter, as with one mind, condoling with M. Noroy, and stating very decidedly their views of the responsibility question. We gave a short history of the circumstances of the case in our last number but one, and have great pleasure in appending to our present remarks the spirited letter of our Parisian brethren.

Our readers will recollect that the conduct of M. Chouippe, the *officier de santé*, was much canvassed, and severely handled by some of the speakers at the first meeting in Paris. There is a distinct paragraph in the letter devoted to the subject, and a quotation from the laws is introduced, which bears heavily on the adversary of M. Noroy. It is to be regretted that matters have been suffered to go this length: personalities might better have been avoided; and we are not the less willing to say so, as we inadvertently allowed ourselves to be carried away, in the first instance, by the opinion of the majority, but are now sensible that the resolution taken by the larger portion of the assembly, was hasty and incorrect. It only affords another proof that masses of men may be swayed just like individuals, by partial feeling and one-sided views, when the passions become

mingled with the judgment. M. Chouippe will no doubt have his revenge: he can retort upon his opponents, that they have *suppressed the law* in giving a garbled quotation. It is a remarkable fact, however it has happened, that in the quotation given in the fifth paragraph, a most material qualifying point has been omitted. The law certainly says, that no *officier de santé* shall undertake a capital operation without the advice and consent of a doctor graduate: but then it adds—"if there be one in the locality." Now this important addition to the clause was overlooked by some zealous advocate of the Noroy cause; and in the drafting of the letter, in which several clever men were engaged, it would seem that nobody even suspected the omission. It cannot be supposed for a moment that it was intentional, or that there was a suppression: it is only curious that it could have occurred, and to be regretted, as it may afford a handle for retaliation to the adverse party. It appears that there was *no* doctor graduate practising in the same locality with M. Chouippe.

With this little exception, which unfortunately in a deliberate document of the kind, *volat irrevocabile*, we can see nothing in the letter which is not highly to be approved of. Its temper is calm; its tone is decided; and it will be observed that the great body of practitioners in the French metropolis no longer insist on that abstract and absurd principle of irresponsibility so rashly supported by some wild reformers among them. They distinctly enjoin obedience to the laws; they refuse to allow the medical man who has transgressed wilfully or by culpable neglect, to shield himself beneath any supposed professional privilege; but they as decidedly deny the right of judges and common juries to take cognizance of what is only properly cognizable at the bar of public opinion.

We do not pretend to be adepts in the law of France, but our impression is, and we have reason to believe, that medical practice is much more unprotected in that country than among us. Here we suffer quite enough, heaven knows, from the inroads of quacks and unqualified pretenders; but if, on the one hand, we are less screened than our neighbours from the intrusion of such gentry, it must be allowed, on the other, that the state of our law is much clearer than theirs, with respect to medical responsibility. What they contend for so earnestly, we enjoy. No qualified practitioner (unfortunately but too often no *un*qualified one either) is ever meddled with for malpractice, unless it can be shewn to have originated in culpable ignorance or neglect; and "no physician or surgeon who gives his patient a potion or plaister to cure him, but which, contrary to expectation, kills him, can be convicted of murder or manslaughter: it is simply held to be a misadventure*." We are, however, certainly exposed to one serious provision, made and ordained by the wisdom of our ancestors, of which we might complain, perhaps with as much reason as our French brethren, did not the spirit of the age operate in keeping it in great measure in abeyance;—we mean, that by the law of this land, we are liable to the imputation of a great misdemeanor and offence, if our practice be unsuccessful in any case, and it can be proved that the catastrophe was the issue of an *experiment*. This, as it is justly observed in the subjoined letter, is opposed to all improvement in the healing art, and the consequence would be fatal to the best interests of humanity. But our public have long felt what the French say theirs ought to feel—namely, that the enforcing of such a law must put in jeopardy three important objects—"sufferings to be relieved, diseases to be cured, and life to be prolonged."

* Blackstone.

A late writer on the laws of the medical profession in France*, takes a very sensible and straightforward view of the question. In his chapter on medical responsibility, we find him arguing as follows: "When the medical man acts with zeal and forethought, and under the inspirations of his prudence and his best ability, it were unjust and absurd to call him to account: he is only answerable to his own conscience. To maintain the contrary, were to aim a heavy blow at the progress of medical science, and to degrade the medical profession. Why not, by parity of reasoning, make barristers answerable for the issue of the causes entrusted to their care? The circumstances are perfectly similar." M. Trebuchet then alludes to the case of Dr. Helie, and the first part of that of Thouret-Noroy (both now on record in this journal), after which he proceeds:—"It is impossible to read this judgment without being strongly impressed with the difficulties entailed by the doctrine of responsibility, and the false position into which it throws the tribunals which act upon it. But let us not be misunderstood. We are most ready to admit the principle whenever it bears on facts which all can understand, or infringements of the laws beyond the reach of misconstruction. Thus we would not hesitate to enforce it in the case of a medical man who should prescribe or operate in a state of drunkenness; or where a surgeon suffered his patient to die of hæmorrhage after amputation, through an unwillingness to call in a professional assistant; or where a physician ignorantly writes a recipe that despatches his patient; or where a medical man, in pressing difficulties, refuses assistance, &c. &c. On the same principle, a notary becomes liable if he has omitted the requisite forms in a legal document: an advocate also is liable in this sense—and so are the judges themselves. With what show of reason, then, can it be argued, that in grave offences which can be appreciated by all—where a mother, a wife, or a child, has been carried off—that there the business should end; the medical man should take his fees, and leave us to our sorrows? This surely would be to exempt the medical profession from the natural laws that bind society."

We are well pleased to find such sentiments freely advocated by an author of so much talent and integrity; but still more so to perceive that the medical practitioners of Paris, as a body, liberally adopt and avow them. Here is their letter:—

To Dr. Thouret-Noroy.

Sir and Respected Brother,

Your appeal ought to be listened to by every member of the profession.

The honourable step taken in your favour by the Provident Society *(l'Association de Prevoyance)*, and the eagerness with which other medical men have followed their example, are decisive, if we only understand aright the bearing of the struggle in which you are involved.

But there are two distinct considerations, sir, in this affair of yours: first, the particular fact in which you are immediately concerned; and, secondly, the general principle of medical responsibility.

With respect to the first, in addition to what has been decided by the medical men of Rouen, we should say in the most unequivocal terms, upon examining the law process altogether and in detail, that we have not found any documents which would be conclusive for conscientiously convicting you; yet *we* ought to be, in such a matter as this, the most enlightened jury, and the most competent judges.

We deplore the absence of certain elucidatory testimony, but feel that it would not have been wanting for the information of the judges, in so important an affair, had not M. Chouippe, *officier de santé*, failed in the first instance in the observation of that propriety which is required of all the mem-

* Trebuchet; Jurisprudence de la Médecine en France, 1834.

bers of the profession—the demanding a consultation in a case of difficulty: and, in the next place, had he not infringed the law of the 19th *Ventose*, year xi., which is to this effect:—"That no *officier de santé* shall practise any capital operation, except under the inspection of a graduate doctor."

But supposing for a moment, (which, however, is far from being proved,) that there was an aneurism in question, the principle of medical responsibility would still clearly not be applicable; and this leads us to the second point under consideration.

With regard to the principle of medical responsibility generally, we will be bold to say that it is nowhere written in our laws, and that it has never been acted upon, except in some few instances, by extension,—by analogy. Is it possible to suppose that such a principle would have escaped modern legislators, when it is traced in letters of blood in the Roman law? No; and if we ask Montesquieu the reason, he tells us: "The Roman laws were not made under the same circumstances as ours: at Rome any one might meddle with medicine that would; but here medical men are obliged to study, and to take degrees; after which they are supposed to understand their art."—(*Esp. des Lois*, xxix. 14.)

We shall not, however, avail ourselves of the fact, that medical responsibility is not written in our laws: were it even written in common sense, we should be the first to demand its application; but we must say, on the other hand, that if the principle be once admitted, the free, conscientious, progressive exercise of the healing art is rendered impracticable, and humanity is left in continual danger. Society, in truth, more than we, ought to dread seeing the medical man placed in the cruel alternative, either of remaining in a fatal inactivity, abandoning his patients to the certain consequences of their complaints, through a regard for his own safety, or attempting their cure by operations, salutary no doubt, but of such a nature that in certain cases, which can neither be calculated on nor foreseen, he may compromise his honour, his reputation, his fortune. It is, therefore, not science merely, nor the medical body exclusively, which would suffer by the arrangement, but the community at large would find itself incessantly trammelled in the threefold object of—sufferings to be relieved, maladies to be cured, and life to be prolonged.

Let us observe, however, that there is no wish on our part to interfere with the operation of the laws with regard to medical men who may have betrayed bad feeling, inadvertence, guilty purposes, or criminal error, in the discharge of their duties. Every offence committed in the exercise of our profession ought to be punished with so much the more severity, as through that very exercise the evil-disposed have the more facility in the execution of their plans. It is evident that all misdeeds, which cannot be reasonably attributed to the uncertainty of medical science and the difficulties of the art, ought to be punishable; but all others are only cognizable at the tribunal of public opinion.

In general, that happy instinct which animates the numerous reunions of enlightened men, does not recognize error in facts which awake in all the same sentiments and the same sympathy. It is accordingly, sir, at once our duty and our happiness to announce to you the resolution adopted by this assembly, that you should be apprized by proofs, material and moral, of the interest universally excited among us by your unhappy affair; and we are flattered, sir, by having this opportunity of transmitting to you the creditable expression of our feelings.

THE MEDICAL PRACTITIONERS OF PARIS.

Signed, on behalf of the meeting, by the committee—

Orfila,	A. Berard,
Double,	Vidal de Cassis,
A. Dubois,	Forget, *Secr.*

MR LISTON.

WE understand that an operating surgeon for the London University Hospital has at length been procured, in the person of Mr. Liston, of Edinburgh. It was said very lately that Mr. L. had declined the offer, and that he had it in contemplation to join a new school at Westminster Hospital. We believe, however, that some difficulties regarding the arrangements in Gower-Street have been got over, and that the above appointment has actually taken place.

CLINICAL LECTURE

ON AMPUTATION,

Delivered at the Middlesex Hospital, October 11, 1834,

By Sir Charles Bell.

I need not say, gentlemen, that I am happy to meet you again.

The chairman of the Committee of the House of Commons, lately sitting, on our profession, put this question to me, and obviously with that tone which shewed that he expected my ready acquiescence:—"Do you think that the knowledge of the members of your profession, at the present day, is greater than formerly?" This question made me reflect upon my early days, and to remember those to whom I was indebted for education; and as I had had the pleasure of sitting before Drs. Black, Monro, Rutherford, and Gregory—and, at a later period, the higher gratification of being the intimate friend of Mr. Abernethy, and of consulting with Mr. Cline, not to speak of my earliest and best instructor — this question very naturally brought me to reflect upon the eminence of these men, and mentally to ask, who are in their places now? In short, gentlemen, I believe I spoke correctly when I said that the knowledge of our profession is more diffused now than at a former period, but we shall look around in vain for such men as I have mentioned; and this touches you very closely, because you have not such authorities to look up to as I had in early life. You have not the example before you of men having the same sway over the profession, or who have as sedulously given themselves up to its improvement, and to the teaching of it. You have a greater number of authors (I do not speak of lecturers), whose age and opportunities hardly permit a knowledge of what they write upon; yet who deliver themselves with a freedom and decision that mislead you. I like to see young men doing that which young men can do best, where the eye is acute and the hand steady; investigating into structure — anatomists — an employment which becomes them; but it is far otherwise when young men take up practical subjects with the air of authority of an old practitioner, and lay down a rule with that decision which few of the oldest are entitled to do. I say, therefore, you enter the study of your profession with this disadvantage: you cannot distinguish, among the papers and pamphlets that treat of matters of practice, who it is that deserves your confidence; you have still to learn in what authorities you may confide.

I offer myself to your assistance as your friendly commentator, both on the cases that occur and the questions that are rife among you: one who has, I believe, more years' experience than any who now take an interest in the studies of our pupils— one who has never distinguished himself by extravagance and the mere love of novelty, when life and death are in the balance.

I am very desirous of addressing to you some observations upon *Cancer*, which I feel I am bound to do: it was neglected during the whole of last year. It happened some years ago, that on a certain day a gentleman came into this hospital and gave 6000l. for the establishment of a cancer ward. On the death of Mr. Whitbread, it was discovered that he was the benevolent and munificent donor. From that time, then, to this, we have had a succession of patients in the last stage of this disease, and the reputation of the hospital in that respect has brought a great many private cases, of the same kind, under the observation of our surgeons; and although we cannot give such sums of money, yet we are bound, under the same influence which actuated this benevolent gentleman, to do all we can to make this part of our charity useful. With that view, I will, through you, and in effect to extend the benefits of it, take an early opportunity of presenting you with some of the records of this hospital, and drawing your attention to the subject.

AMPUTATION.

In the meantime I shall offer you some observations on the subject of amputation, because there is no part of hospital practice that will better accord with those principles which are inculcated in the early part of a general course of surgery. This is a subject that brings you to reflect upon those processes of inflammation which are the precursors of adhesion— brings you to reflect upon what are the impediments to adhesion — brings you, in short, to consider the constitution, as well as the state of the part. Besides, were we to enter upon the *question of amputation*, —that is, the various occasions of performing the operation—there is none which embraces so large a portion of a general course of surgery, or which impresses you with the importance of your art: you must entertain many difficult questions before you can make yourselves masters of this. I find, then, before me, a note of the following cases. The first is,

Fracture from an Accident on Railway, compound, and complicated by loss of blood.

In this case, the joint was not only cut into, but the cartilage on the end of the

femur was peeled and folded back, giving proof of the great force employed.

I will not detain you, at present, with a definition of compound and complicated fracture; but the reflection I make upon the subject is, that in consequence of these vast improvements in machinery, and the multiplication of them, and of a new power, as it were, being brought into operation, acting with more than the force of gunpowder, the country surgeon cannot escape from those oppressive questions which assail the army and the hospital surgeon: he must prepare himself to say what is to be done in these tremendous accidents. I was lately at Liverpool, and the party was very desirous of seeing the railway; I was satisfied with seeing one effect of it, for, on going into the hospital, I found a man, just brought in, actually divided; a workman who, although he had been upon the railway from its commencement, yet could not calculate the rapidity of motion in the machine; but happening to look a little to the right, the engine came upon him to the left, which cut his thigh obliquely across, and also his pelvis, and so mangled him that he lived only three hours. These railways being about to be formed all over the country, it is an additional reason why you should take into serious consideration what is to be done in these severe accidents, where not only the parts are laid open, and the bones fractured, but where the surrounding parts are benumbed and injured by the extraordinary rapidity with which the weights are impelled.

The next case is,

Fracture, with Compound Dislocation, of the Wrist, and Mortification.

This case you have just seen; and I remind the younger students that this is what is called the *humid gangrene*, in opposition to, or contrasted with, *dry gangrene*; the latter being the spontaneous mortification of the extremities, which comes from disturbance or weakness of the constitutional powers. Such a mortification as you have now seen is rapid—is attended with extravasation of fluid, with emphysema; the air of putrefaction extending through the cellular membrane. It is wet, cold, and flabby; and presents a totally different appearance to dry gangrene.

There is a sort of rule of the profession, that when you have to operate on a case of mortification, you should not do it until there is a line of demarcation—a line of inflammation which marks the power and disposition of the living surface to separate from the dead part. The meaning of it is, that you are to look for that effort of the constitution which shews a disposition and a capacity to throw off the dead part. The surgeon's knife is required to remove the dead part, to aid the constitution in its attempt; and when he does that in these circumstances, he has no apprehension of mortification coming upon the stump. But if the mortification be progressive, and result not directly from the injury, but from the state of the constitution, and the limb be then removed, you find mortification will shortly take place on the stump. In the present case there is a consultation as to the propriety of immediate amputation, and I say, "lose not a moment." You have two powers here to consider. As to the patient, he is a poet, or rather an opium-eater and a poet: he throws himself over the window; and all this implies there is a great disturbance of mind, and it might be presumed a great deterioration of the powers of life. The mortification, then, takes place partly from the injury and partly from the constitution, and it is just one of the cases that gives rise to the important question, whether we can venture to amputate, without the danger of mortification coming upon the stump. I say, for my own part, I am for immediate amputation; because, although I see that the emphysema is spreading, and the mortification progressive, yet I trust that so large a share of the cause of mortification is in the accident itself, that, with due attention to the patient's constitution, he may rally, and the stump remain free from mortification. But more especially I am induced to amputate immediately for this reason, that I know, in the condition of the limb now presented to us, if it be permitted to remain, absorption must take place from the mortified parts by the living surface. You will observe that there is a great line of contact between the mortified and living part; the latter absorbs the putrid matter, and then the patient sinks rapidly; not, as it were, the direct consequence of mortification, but the effect of absorption of the putrid matter.

I cannot touch upon this subject without reminding the younger surgeon of the possibility of his mistaking ecchymosis for mortification; for in such accidents, the blood is sometimes so extravasated into the cellular membrane, and the skin is so gorged and injured, that life is lost in it; and from its death you would imagine that the limb was altogether mortified. I have mentioned humid and dry gangrene, and I remind you that surgeons mean by *sphacelus* the entire morfication of the limb through and through, so that from the surface to the bone it is dead, and in a state of chemical change; for you see it is possible that the outer parts of a limb may be mortified, while the muscles and the internal parts possess life. You must be careful,

then, to distinguish the effect of a bruise, attended with extravasation of blood and mortification of the skin, from a case of true humid gangrene, where the whole limb is affected: the one being purely local and superficial, the other formidable, and more or less constitutional.

Compound Fracture of the Tibia.

The third case here mentioned, is one of compound fracture of the tibia; "comminuted, bruised into portions; a part of the tibia is removed; bleeding;" and this latter circumstance it is which makes the complication. On the fifth day, three quarts of blood were lost in two or three minutes; which implies that a large vessel—the posterior or anterior tibial artery—was torn by the bone. But I must remind you that we have very considerable difficulty in practice, in saying whether the blood proceeds from the larger or the smaller artery—that is, from the anterior or posterior tibial artery, or from the nutritious artery of the bone; because, when the bone is split, and the nutritious artery opened, the latter is in very peculiar circumstances — it is not permitted to contract, and it bleeds day by day so profusely, that you would be very apt to conceive that the hæmorrhage proceeded from the large artery. I remark the fact, without, at present, entering into any disquisition upon the cause; but just as you know that a person will actually bleed to death, in some circumstances, from the drawing of a tooth, so you may understand that much blood may be lost from so small a vessel as even the nutritious artery of the tibia.

The next case on the list is one of

Fracture into the Ankle Joint.

Very severe pain and excessive suppuration took place in the injured part; at length it was obvious that the wound communicated with the joint. Amputation was therefore performed. The stump granulated, but with much of discharge. The patient suffered great emaciation; the lungs became affected, and he died five weeks after the operation. I hope, then, many of you anticipate what I have to say on this head. When you are thinking of amputation, or of any great operation whatever, you must remember that there is no performing so formidable an operation as cutting largely, and exposing an extensive surface, which must inflame, and most probably suppurate, without producing a corresponding condition of the whole system; and that if there be, as it is vulgarly and yet truly expressed, any weak part in the constitution, this general state of excitement and fever will fall, with accumulated influence, on that part; so that if a man have a disposition to phthisis, and suffers amputation, you will immediately find an aggravation of all the formidable symptoms, and ten to one but he dies, as this man did, from a large abscess in the lungs. It is the same in any great operation as in amputation. The idea has been, that by cutting off so large a portion of the body, more force of circulation was given inwardly—that the powers of the circulation became too great. That is not the rationale. The fact is, the inflammatory process and fever produce an action on the part disposed to disease, and if that part be the liver, kidney, bladder, or prostate, it will be very apt to be influenced—to become the seat of inflammation and suppuration. Hence you see how important it is, in all questions of amputation and of great operations, to see justice done to the patient and to your own characters — to see that the patient has no disposition to local or internal disease. Sometimes you cannot suspend the operation; but if you cannot withhold the hand, yet take some friendly advice upon it, and let it be understood that the danger incurred is foreseen, and is unavoidable—that you see it, and would ward it off if you could. This touches the case that I spoke of as I went round the hospital yesterday. A man comes in with a fistula in ano: it is very easy to operate, but, on looking at him, it is evident that the local disease belongs very much to his constitution—that there is a disposition to disease in the mucous membrane generally; and you are accordingly directed to symptoms, and find that there is a complaint in the chest. No doubt, if the surgeon with a bold hand, and in a thoughtless moment, had resolved to cure the man by an incision in the rectum and anus, cough, shortness of breath, inflammation, pain, and probably death, would be the early result.

Compound Fracture of the Leg—Trismus.

In this case, a man is thrown from his coach-box; the consequence of which is a compound fracture of his leg, "spasm, suppuration never fairly established, discharge sanious, and, on the fifth day, trismus." This brings you to consider the question in another aspect. A consultation is held, and it determines that amputation shall be performed, but before the man can be carried into the room he dies. Here is a lesson not to be forgotten. Remember that a man with trismus, having suffered for two days, and on the third day seeming to be much better—to be much relieved from his spasms and his sufferings, and capable of opening his mouth—is, in fact, about to die. Do not be thrown off your guard by these apparently favourable circumstances, and say to the friends he is now relieved—he can swallow, he can open

his mouth, he is no longer shaken by these violent spasms, he is obviously better—when in half an hour he may be dead. Of course the same observation touches the question of amputation.

CONDITION OF THE STUMP.

Neuralgic pains, &c. after amputation.—The next head of inquiry is also a very important and practical one; it refers to stumps after amputation, and neuralgic pains. You have seen the surgeons consulting on the condition of two patients, the question turning on the state of the stumps. I would ask you, is it worth your while to consult with a man who makes wooden legs? After all, is it not your desire that the stump should be such a one as can be put into the socket of a wooden leg? I fear we are a little negligent in this. We are very anxious to save skin, and there are good reasons for it; but remember, if you save too much, and have a loose flabby stump, it is not a good one, or at least the maker of a wooden leg will not allow it; it gives him a great deal of trouble to satisfy his employer, and to enable the patient to rest on the wooden leg. It is essential, then, to save skin, but you must save it with a certain reflection, viz. that you must form a firm stump, and not a loose or flabby one.

But another question is much more important with regard to stumps, and that is, the condition of the extremities of the nerves. Let me remind some of you, that last season I called you back to the consideration of this matter*, as by far the most important which comes under the head of amputation; for I know no suffering greater than that which results from the stump after amputation, when the nerve is engaged in the cicatrix, or when it is laid over the extremity of the rough bone.

Another question under this head of neuralgic pain must enter into your deliberations. There is a disease of the knee-joint, for example, which exhibits no formidable appearance outwardly, nay, I may say inwardly, for in the case alluded to there is only a small portion of cartilage detached by ulceration, perhaps just upon the point of the condyle, yet the case is attended with more suffering than those cases of true white swelling which you see from day to day, where the limb is contracted, the joint swollen, and a succession of abscesses form around it. Mark, then, this case of extraordinary pain attended with little seeming derangement of the parts internally, and you will see the necessity of remembering that there are mere neuralgic pains greatly resembling it — that is, pains (for the term has been recently got up) not proceeding from the disease of the part, but from some condition of the system, or some derangement of the functions, of which you are yet ignorant, but which the greater part of the profession, and I believe justly, conceive belongs to the constitution, or to some internal irritation. You will not be here a season, I am sure, before you are familiar with these. Not to speak of the true tic douloureux in the face, you will find such neuralgic pains in the mammæ of patients to be sometimes so excruciating, that they will suffer amputation if you please. In other cases there is pain in the testicle, excruciating pain, worse than the tic in the face. But the pain is not removed by amputating the organ! So there may be pains in the extremities referable to a joint, yet not in the joint; the patient experiences the pain in the extremity, but the disease is elsewhere. I remember being consulted upon one of these cases, and so were most men of any sort of eminence in town. A very beautiful lady of rank, had a pain in the ankle-joint; it was treated as disease of that joint, and yet I never could discover that there was any puffiness. You are aware that when there is effusion into the cellular membrane and skin, or a puffiness over the part, it is an indication of internal disease: thus you distinguish disease of the bone, disease of the spine, &c. But there never was observed any discolouration, any inflammation, or puffing, of the ankle-joint of this lady, although the pain was excessive. Fourteen years have elapsed, and the pain is there still. She has been married; and the degree of pain she suffered was so great, that this lady was led to the altar on crutches, and moves on them to this day, yet the joint is to all appearance perfect. It would be very wrong to amputate in such a case. The patient would submit because the pain is so excruciating; but if the limb were removed in these circumstances, she would have to complain that it had been taken off, and perhaps buried, and yet that the pain was still in it.

But sometimes the pain resides in the affected part, of which I will give you a curious instance. Baron Driesen, General in the Russian service, received at the battle of Borodino a musket-ball in the lower end of the femur. He suffered much from inflammation of the whole limb, from suppuration and fever. All that, however, subsided, but there remained a fistulous opening leading to the ball, which was socketed in the bone. He was a particular friend of the Emperor, and under that character was sent here to have the limb removed, if necessary. I resisted the operation, for I conceived they had kept up a great deal of irritation by means of dress-

* *Vide* Med. Gaz. vol. xiv. page 185.

ing and introducing setons into the wound. I removed these; the wound closed; and I hoped that in this, as in many other instances, the ball being at rest, little inconvenience would arise. I have known a ball, when deep-seated, remain innocuous for ten or fifteen years, then gradually drop down under the skin, when inflammation and suppuration would declare its place. I sent him home; but when in St. Petersburgh a person proposed to dissolve the ball by pouring quicksilver into the wound, which had opened again. He did so, and it happened, strangely enough, that this practice seemed to succeed. The wound healed, and the surgeon received a riband of honour, and a sum of money, from the Emperor. However, the pains became again excruciating, and under this suffering he came a second time to England, and I think I never saw agony so acute; the pain came like a shock of electricity suddenly plunging into the limb, and so severe that he would faint and fall down insensible from the excess of pain. Under these circumstances I removed the limb; and you will be surprised when I tell you, that on looking at it I found the nerve itself had globules of mercury in the interior of its texture. I was sorry to see this, because I was led to presume that there must be similar globules in the remaining extremity of the nerve in the stump. He went home, and has been a great sufferer with neuralgic pain, which has proceeded from the injection of the theca and cellular texture of the nerve itself with globules of mercury. These "plunging pains" are signs of affection of the nerve. Here is a case in which pain, possessing all the characters of neuralgia, was situated in the part; and so it will sometimes happen, that in amputating, the nerve is left too long; it is folded in upon the bone, or engaged in the cicatrix; and in the very case which is now in the house, we must have to determine whether the suffering of the patient be from the nerve so engaged in the cicatrix, or more purely neuralgic, meaning by the term, pains arising from causes independent of the stump.

In regard to the operation itself, the following are the points you have to consider:—The form of the stump, and the condition of the nerves. As to the first, the thing corrects itself. The lesson is too distinct to be neglected. The surgeon finds that the integuments do not correspond to the face of the muscles, or that the bone projects, and he corrects himself in future operations. But there is a reason for attending to the manner of amputating far more important than this. I wish that your patients may not have a mass, of the size of pigeon's egg, on the end of the ischiatic nerve, the continued source of pain.

In running over this subject, you will remember that there was a time when the limb was at once divided by a circular incision down to the bone, and that Cheselden corrected it. A question arose between Cheselden and Petit, to whom the great improvement was owing, of making a double incision, first through the skin, and then retracting it, and afterwards cutting through the muscles. The practice was early and effectually established in England, but not so in France; and here is the evidence in favour of Cheselden, and against Petit. The English surgeons, following this method, made good operations, and the French, following their authority, made bad ones; and up to the period of the battle of Waterloo I saw operations performed in which there was a total disregard to the principle which directed the double incision, in which the face of the stump was as flat as a piece of bacon in a pork butcher's shop. There was bone, muscle, and integument, all forming one surface. I would not pretend to take this as an example of the manner of amputating in France; but so it was, that I saw two or three amputations by French surgeons after that great battle, which would have been considered extraordinary exhibitions at home. You will remember that a variety of attempts were made to improve the mode of operating, and that Alanson proposed to avoid the consequences of an improper amputation, by scooping out the muscles, for it was nothing else. After making his incision through the integuments, he carried the knife in an oblique direction, the point rested on the bone, whilst the hand was carried round, by which the incision was completed in all the circle. By this he conceived that the muscles round the bone were cut deeper than those which were more superficial; which amounts, after all, to merely cutting out the flesh of the limb in a shape that would correspond with a conical body. This is clearly bad, because the object is to have the muscles hanging over the bone, and not cut away from it: the bone is never to be seen; the muscles should bulge out and turn over it. It was probably with the same intention that M. Louis, the French surgeon, attempted to divide the muscles by two incisions, dividing first the looser, and then the firmer muscles. That is a loose way of talking to you as anatomists. I have seen this operation repeatedly performed by my former colleagues in this hospital, cutting the superficial muscles, letting them retract, and then cutting the deeper muscles, making thus three circular incisions. But, as anatomists, you know that there are not all around the limb a superficial and deep class of muscles. You

may, if you choose, so manage as to cut the vastus internus and vastus externus, and leave the cruralis; but what comes of the muscles on the back of the thigh? There is an anatomical reason for dismissing this mode, and there is an exceedingly good practical reason too for it; it is cutting away the muscles from the bone, and making a haggling irregular surface.—Lastly, Desault with the same view passed the knife as you have seen it lately passed, making a double flap; not a circular incision—not cutting the skin first, but putting down the sword-pointed knife through the limb, so as to transpierce it, and drawing it obliquely down, first on the inside, and then on the outside, so as to form two flaps. This being the operation performed by my colleagues of late, yet being Desault's operation, and one I have often reflected upon, I may be permitted to repeat my objections to it, objections not arising from what we have just seen, where the operation could not be better performed, but to the manner as practised by Desault. I think it forms a very irregular surface, and that although you may say the operation is quickly done, yet the patient is not quickly off the table, for you must have observed that there is a difficulty in taking up the arteries. Why so? Because of the irregularity of the muscles. When the muscles are divided at once, either directly or obliquely, but from without inwards, the arteries project more distinctly, and the bleeding is more free; but in this mode you must have observed the irregularity of the surface, and that the muscles obscure the mouths of the arteries.

Let me tell you incidentally, that you are not to look to the centre of a muscle for an artery. You have been in the dissecting room; and let me ask, did you ever find a large branch in the centre of a muscle? You look for an artery, such I mean as requires the ligature, in the interstices of the muscles. You know what are the branches of the profunda, where they should run, what position they are in with regard to the bone, between what muscles they lie,—such is the use of anatomy; but if you merely take the face of a stump, as some of my early acquaintances would have done, and look to what vessel is bleeding, and tie it, you will be pricking and taking up vessels that are bleeding on the surface of the muscles; and just when you are about to dress the stump, there comes another gush from a great branch in the interstices of the muscles. You must take it anatomically, and look where you know the branches of the profunda, or R. anastomoticus lie, among the cellular interstices of the muscles. This by way of parenthesis.

I was about to say, when you meet with a certain difficulty in finding the arteries upon the stump, from the irregularity of the muscles, what is the state of the nerve? I cannot allow this to escape my observation; for of all the conditions to which man is subject, there is no state of suffering more severe than that produced by the engagement of a nerve in a stump; and therefore I say it is most important that the nerve should be directly divided across, and not obliquely torn out. You cannot secure this effect unless you make a free and decided division of the muscles. When you pierce the limb with a great cutline knife, and put it close on the bone, and draw it out obliquely to make the flap, you cut the nerve longer than the other parts. The nerve is firm, but very elastic; it is not so easily cut through as the muscles. Being so elastic, it goes before the edge of the knife; and if you look carefully to an amputation performed in this way, you will find that the nerve hangs out; that it becomes necessary to draw it out and cut it again. What do you say to cutting the nerve a second time, by way of proof that this operation is attended with less pain! You now understand my objection to this mode of operating. I do not object to it as being a butcher-like operation, I could get over that; but my objection is, first, that the nerves are cut irregularly, and left long; and secondly, that although the two first incisions are done with great dexterity and facility, yet the operation is not so quickly over as in the mode by double incision.

The common operation is to be performed with very little deviation from what is universally recommended, and is to be conducted thus:—If you draw your knife directly in the circle, you will find that the ends of the skin will not fall neatly together; that is of no great consequence, still it is as well to find the surface so nicely cut, that it falls together like a hare lip. To insure this you have only to give the knife the slightest inclination, and to form a semilunar cut or flap on the outside, and when you bring it round on the inside to do the same; so that instead of there being a perfectly circular incision, there is a little deviation—two flaps, one on the inside, and the other on the out. This is done easily, and without ever lifting the knife, so that the looker-on hardly observes that you have in any way deviated from the simple circular incision. The effect, however, is, that the skin falls over the face of the muscles, and unites in a line.

In the next place, you are not by any contrivance to cut the muscle away from the bone. With respect to the operation for amputation of the thigh, it is the easiest thing possible. When you have cut the integuments, and your assistant has

retracted them, you place the knife close to the edge of the retracted integument, and with a sweep carry it down to the bone, and in the entire circle. This makes a uniform surface. But now let the assistant raise the limb up, till the femur comes into a perpendicular position, and then you find the muscles fully retracted, and a large portion of the bone exposed. You now saw the bone horizontally. When you have done, you just see its cut surface; and when the stump is brought down, you see it no longer, and you never ought to see it again; for if you do, it is a bad operation. If you perform the operation with the limb kept horizontally on the table—if you retract the muscles, however carefully, by a split cloth, and not by position—and if you then cut through the bone, as near the muscles as you can, no sooner is the bone divided than up cocks the stump and out pops the bone. It is so easy to demonstrate this on a black board—it is so obvious in itself—that I am surprised that this simple rule should be omitted. Divide the muscles; and when this is done, take a little time—do not hurry—inform your patient that the pain is over, raise the limb, retract the muscles with your apparatus (a split cloth is the best), and then divide close to the muscles. When the limb is up, the bone perpendicular, and the saw horizontal, the effect of it will be to have no splinter of the bones; and I say again, you will just see the surface where you have divided it, and when you bring the stump down to its original position the muscles have all fallen over the extremity of the bone. The muscles covering the bone, and the integuments falling nicely over the muscles, not only have you an amputation well performed in respect to the adhesion and early cure, but you have, according to my conception of it, an amputation performed with the highest possible regard to the deep burying of the extremity of the nerve; which I repeat, once for all, is by far the most important circumstance to which you can attend in an amputation.

FALSIFICATION OF WRITINGS.

A MEDICAL student was recently convicted and punished in France, for forging a will, by altering the handwriting; and it is said that frauds of this nature are becoming alarmingly frequent in that country of late. We should not be surprised if similar attempts were made here ere long by some of our *chevaliers d'industrie;* but fortunately the mode of detecting falsifications of the kind is not difficult, if suspicion be once awakened. Old writing is removed, and place made for new, either by erasure, by the application of muriatic acid, or by both. A supposed erasure should be examined with a magnifier; and if it seem to have been touched with size or sandarac, as a ground for the new writing, these substances may be dissolved with water or alcohol respectively. If muriatic acid have been used, it is not unlikely that all the acid may not have been washed out, when the excess may be readily tested with litmus paper. But whether chlorine or muriatic acid have been employed, it is probable that some traces of the oxide of iron of the old ink may still remain; and these may be rendered visible by washing the part with a camel-hair pencil, dipped in diluted gallic acid. The latter process may have to be repeated several times, and on successive days, allowing the dilute acid to evaporate slowly each time. We are indebted to a paper by M. Chevallier, in the last *Annales d'Hygiène*, for these brief but valuable suggestions.

APOTHECARIES' HALL.

Names of Gentlemen to whom the Court of Examiners granted Certificates of Qualification on Thursday the 16th October, 1834.

Richard Brownlow Barlow, Blackburn.
Robert Gledstanes Carey, Guernsey.
Charles Henry Cornish, Taunton.
George Jameson, Edinburgh.
Robert Marsh, Bath.

LITERARY INTELLIGENCE.

Outlines of Forensic Medicine. By William Cummin, M.D., Lecturer on Forensic Medicine at the Aldersgate-Street Medical School. *In the press.*

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *Oct.* 14, 1834.

Abscess	3	Hernia	1
Age and Debility	22	Hooping-Cough	7
Apoplexy	3	Inflammation	22
Asthma	2	Bowels & Stomach	6
Cancer	3	Brain	1
Childbirth	5	Lungs and Pleura	5
Cholera	3	Insanity	1
Consumption	58	Jaundice	1
Constipation of the Bowels	2	Liver, diseased	3
Convulsions	22	Measles	4
Croup	2	Mortification	2
Dentition or Teething	7	Paralysis	1
Dropsy	8	Scrofula	1
Dropsy on the Brain	16	Small-Pox	10
Dysentery	1	Thrush	3
Fever	6	Tumor	1
Fever, Scarlet	8	Worms	1
Gout	1	Unknown Causes	147
Hæmorrhage	1	Stillborn	25
Heart, diseased	2		

Decrease of Burials, as compared with the preceding week . . . 151

NOTICES.

Professor Mayo's first lecture on Pathological Anatomy shall appear next week.

We shall be glad to have the papers to which our Dublin correspondent alludes. The one received will probably be given in our next number.

W. WILSON, Printer, 57, Skinner-Street, London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, OCTOBER 25, 1834.

LECTURES

ON

DISEASES OF THE CHEST,

In the course of which the Application of

PERCUSSION AND AUSCULTATION

ARE FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture IV.

THEORY OF THE SIGNS OF DISEASES OF THE LUNGS—(continued.)

EXAMINATION OF THE SIZE, MOVEMENTS, &c., OF THE CHEST.

I now proceed to the consideration of some other signs of disease of the chest, which we shall class under the following heads:—In the first place, those derivable from the touch; secondly, from the examination of the external parietes of the chest; thirdly, that from pressing the abdomen, a means imagined by Bichat; and, fourthly, of the mode of measuring the capacity of the lung, proposed by the late Mr. Abernethy.

EXAMINATION BY THE HAND.

First, with regard to touch. The sign afforded by the touch generally gives to the physician but very insufficient data; the hand is infinitely more important to the surgeon in detecting disease: however, we derive some advantage from it, particularly in affections of the abdomen. Thus we can discover peritonitis, and determine its extent, its situation, and, indeed, its degree, by the amount of pressure which the patient can bear. When the liver or the spleen are enlarged, we can determine, to a certain extent, their volume, by the hand. Dropsies, or tumors formed in the mesentery, may be detected by the same means. Upon one occasion, I ascertained by the hand the presence of a calculus in the pelvis of the kidney. It was in a very thin subject. Certain affections of the uterus may frequently be distinguished by the touch; and, in fact, it is much more easy to distinguish diseases of the abdomen by the hand, in consequence of the softness and pliability of its parietes, than the diseases of the lungs, surrounded, as those organs are, by the comparatively unyielding surface of the chest.

There are, however, some signs of diseases of the lungs that may be derived from touch. Thus, for instance, if a person, with a very grave voice, speaks or sings, upon applying your hand to the parietes of the chest, particularly at the upper part, you will very distinctly feel a vibration all over it; but it only occurs in persons with a large chest, and in whom the voice is grave. Can we make use of this sign in diseases of the lungs? To a certain degree we can. You may be sure that wherever you feel this vibration, the lung is permeable at that part, and therefore it is useful as a confirmative sign. On the other hand, you must not conclude that, because you do not feel the vibration, the lung is not sound, unless there be some other symptom indicative of disease: as, if upon percussing a certain part, you have a dull instead of a hollow sound, and are thereby led to infer the existence of disease, then, if on applying the hand, you do not find a vibration, you have a confirmative sign of the impermeability of the lung. In empyema, the touch occasionally is of use. Suppose a collection of pus commences in the cavity of the pleura, and makes its way between the intercostal spaces, forming a projection between the ribs, you can then feel the tumor; and if, on pressing it, the fluid recedes, and then, by coughing, the swelling returns, you ascertain the nature of the affection by the tact. Sometimes a large cavity will form in the apex of one

or other of the lungs, which we call a *tubercular excavation;* in the first instance, this cavity is not complete, but is usually traversed by a number of bands, of pulmonary structure, not yet destroyed, and in this state it has been called a *multilocular* cavity. When this multi-locular cavity is near the surface of the chest, the matter contained within it becomes entangled, and every time the patient coughs, the secretion strikes its sides, and gives a feeling of gurgling, which gurgling may be distinctly felt by the hand [a preparation shewn of a multi-locular cavity, which produced this sign.] Again: there is a sound with which many of you are perfectly familiar—the deep sonorous wheeze, or rhoncus—which is heard in chronic catarrh. This sound is so loud and intense, that it communicates a vibration to the parietes of the chest; so that it is a common practice of mine to pass my hand round the patient's body, and to make him take a deep inspiration, for the purpose of determining the extent of this species of rhoncus. I do not recommend you to employ this means alone, because the stethoscope will determine the affection much better. *Emphysema pulmonum,* a disease which we shall see consists in a permanent dilatation of the air cells, or in the infiltration of air into the cellular substance which divides the lungs into lobules, often communicates a crepitation to the parietes of the chest, which may be felt by the hand; it is a crepitation like that which a thin dried bladder would give upon pressure. The *fluctuation* upon movement in cases of pneumo-thorax, with effusion into the cavity of the pleura, can readily be detected by the tact. Aneurisms of the thoracic aorta, when they form external tumors (of which there is an enormous specimen on the table), may be distinguished, of course, by the same means.

MOVEMENTS OF THE CHEST.

We now proceed to the examination of the signs to be derived from observing the parietes of the chest; and, first, in relation to its movements.

There are three diseases by which that state of respiration is produced which we have called *incomplete,* a state in which the ribs may be seen immoveable on one side of the chest, and moveable on the other.

The first case is that in which an accumulation of fluid takes place in the pleuritic cavity of one side; the lung then becomes compressed by the increased secretion against the vertebral column, so that it is often reduced to a very small volume; the respiratory act ceases on that side; the ribs are there then consequently perfectly quiescent, while you will see on the opposite, or healthy side, that they move with a rapidity proportionate to the dyspnœa.

The second case is that of very acute and extensive pleurisy; the patient then experiences great pain during the act of inspiration; he consequently avoids elevating the ribs on the side affected, so that they become immoveable, or nearly so. This may be easily distinguished from effusion, inasmuch as in acute pleurisy the disease occurs suddenly, and there is much pain, neither of which happens when effusion takes place; and in the latter case also the diseased side of the chest becomes enlarged.

The third instance of incomplete respiration arises from rheumatism of the muscles of the chest, or, as it has been called, *pleurodynia.* Such is, then, the pain occasioned by throwing the inspiratory muscles into action to elevate the ribs, that the patient avoids doing so as much as possible, and breathes only by the healthy side. This state may easily be distinguished from the two others by the pain being increased by elevating the arm of the affected side, by the patient not bearing pressure upon the ribs, and by co-existing rheumatism of some of the other muscles of the body.

DIMENSIONS OF THE CHEST.

Let us now examine the chest in relation to the capacity of its two sides, for differences may occur in that respect, rendering most important signs. We will proceed to explain the causes of these differences; and first of

Dilatation of one side of the chest.—We shall see, when we arrive at the subject of pleurisy, that in the second stage of that disease, more or less fluid is accumulated in the cavity of the pleura; sometimes the quantity is very small, sometimes it may amount to many pints; I have seen as much as nine pints [diagram].

You cannot but suppose that this large quantity of fluid must produce some effects by its presence upon the parietes of the cavity in which it is contained; and it is to those effects I wish at this moment to draw your particular attention.

The pressure of the fluid will first affect the parts which, from their structure, offer the least resistance; thus the lung, being of a soft and spongy tissue, vesicular in its texture, and filled only with air, diminishes gradually in its volume, in proportion to the accumulation of the fluid; so that at last it is reduced to a very small mass, which is pressed against the vertebral column. In the next place, the heart is driven out of its position by the fluid, so that if the effusion be on the left side, that organ is pushed towards the right,

and its beatings can be heard on the right side of the sternum, and scarcely at all on the left: if the accumulation be on the right side, the heart is pressed still farther to the left. The diaphragm, forming the floor of the cavity, will be forced downwards; but as the liver supports that muscle, particularly on the right side, so much resistance is afforded that the effect of the compression is rarely sufficiently considerable to depress that organ below the margin of the false ribs; it no doubt does so occasionally, but I think rarely. If, however, the fluid be in the left pleuritic cavity, the diaphragm will be rendered permanently convex towards the abdomen, will push forwards the stomach, &c., and form a diffused projection along the margins of the cartilages of the false ribs of the same side.

Observe the effects of the pressure upon the external parietes of the chest: the intercostal muscles are first acted upon; they are pressed directly outwards, so that the inner surfaces of these muscles are projected to a level with the external surface of the ribs, thus effacing altogether the appearance of intercostal spaces, and rendering the whole side perfectly smooth, while on the other side those spaces may be sufficiently well marked; nay, some have said that the intercostals have so projected as to bulge beyond the ribs, so that the spaces have become elevated instead of depressed. I have often sought for this, but cannot say I have ever distinctly seen it. Not only are the intercostal muscles acted upon, but also the ribs themselves; they are pushed directly outwards, so that the transverse diameter of that side of the chest becomes increased, and its capacity enlarged. Nothing is more easy than the detection of this enlargement by the eye: a small difference may be perceived—a difference only of a quarter of an inch in the comparative measurement of the two sides, can be determined. Laennec was satisfied with the appearance alone; but as the sign is rendered more perfect by measuring, I should recommend you always to do so, more particularly as you occasion no pain or distress to the patient.

Mensuration of the chest.—For this purpose I generally use a measure, made of some inelastic stuff [shewing it], graduated into inches and tenths of inches; I apply one end of it to the centre of the xyphoid cartilage, and pass it round to the spinous process of the dorsal vertebra exactly corresponding, observing the number of inches; I then measure the other side exactly in the same way, and note the difference. You may measure also higher up if you will, but I am generally satisfied with that which I have mentioned. [The mode of measuring was here shewn upon casts.]

Contraction of one side of the chest.—After effusion has taken place from inflammation of the pleura, an albuminous matter separates from the fluid and forms a false membrane, which lines the parietes of the containing cavity. This membrane adheres to the costal pleura, is reflected over the diaphragm, and passes from thence over the lung. It varies considerably in thickness; sometimes it is a mere thin and semi-transparent pellicle, through which the colour of the parts beneath can be distinctly seen—frequently it is several lines thick, and perfectly opaque.

Nature often removes the effused fluid by the process of absorption, or art may effect that removal by the operation of paracentesis thoracis. In either case, in proportion to the evacuation of the fluid, the compressed lung gradually expands, and tends to resume its former volume. If the false membrane be thin, it will dilate with the lung, and allow that organ again to touch the ribs; but if it be thick, it will bind the viscus so completely against the vertebræ that no expansion can take place. Both these are, however, extreme cases; it generally happens that the false membrane allows a very considerable, although not complete, development of the lung.

A beautiful effort of nature follows this state of things; for when the lung cannot farther dilate—when it cannot touch the costal pleura—the whole of the ribs of the affected side fall inwards upon the organ, sometimes sufficiently to reach it; the false membranes of the pulmonary and costal pleura then adhere, and form a single membrane of a fibro-cartilaginous structure.

In these two casts you perceive well-marked instances of this *falling in*, or contraction of the chest. The operation for empyema was performed in both cases. In the smaller one, the measurement before the operation gave an inch and a quarter more on the diseased side than on the healthy. You now see (measuring the cast) that it is an inch less; giving a contraction altogether of two inches and a quarter. The larger cast offers a still greater difference, and the depression of the side is here great indeed.

Consequent upon this depression of the ribs, the shoulder becomes depressed also—the inferior angle of the scapula is lower on the affected than on the opposite side—the last rib also approximates much nearer to the crista of the ilium.

The sternum and dorsal vertebræ deviate from their natural positions, as you

may see in these casts. The contraction is on the left side, and the sternum and vertebræ are pushed towards the right; so that the centre of the former bone is not on the median line, and the vertebræ form a curve whose convexity is to the right side also.

ABDOMINAL PRESSURE.

Abdominal pressure was proposed by Bichat. He imagined that we could determine the capacity of the chest by pressing firmly upon the abdomen, so as to diminish the perpendicular diameter of the chest, and see how much the patient could bear before he felt a sense of suffocation. You may suppose that it must be impossible to do this—particularly under disease. Laennec justly remarked, in reference to this means, that we had no right to interrogate nature by putting a patient to the torture.

PULMOMETRY.

The late Mr. Abernethy proposed to determine the capacity of the lungs by making the patient breathe through a tube, the opposite extremity of which was passed into an inverted jar full of water, placed in a pneumatic trough, and to observe the quantity of water he displaced in the jar. This means looks very pretty in theory, but it is perfectly useless in practice; for some persons, even of large chests, will displace less of the water than those of smaller proportions, from the greater determination of the latter in continuing to expel the air from their lungs; but as it is the comparative capacities of the healthy or disordered states we wish to obtain, how can we possibly know what quantity the individual could have breathed in the healthy condition? It is needless also to state how difficult it would be to force a person, labouring under dyspnœa, to make the experiment; sometimes, too, it would be even a dangerous one.

These are the modes of investigating diseases of the lungs, and I hope you have by this time been able to appreciate their various degrees of value; but we have one more means, of infinitely greater importance, by which we can determine the specific nature of the lesion — viz. by AUSCULTATION. But this is too interesting a subject to commence towards the close of a lecture; I shall therefore defer it till the next. I will, however, occupy your time with a few observations on the biography of Laennec.

René Theophilie Hyacinthe Laennec was born on the 17th of February, 1781, at Quimper, in Lower Brittany. His father was an advocate. Laennec was placed, early in life, under the care of two paternal uncles—the one an ecclesiastic, and the other a physician, Dr. Laennec, professor of materia medica, at the secondary school at Nantes.

Laennec very early obtained a reputation for scholastic acquirements, more particularly in the Greek and Latin languages. He used to communicate with his pupils, and deliver his clinical lectures in Latin, for the double purpose, as he said, of familiarizing them with that language, and preventing the patients under his care from hearing his opinion of their cases. He was also much attached to antiquarian pursuits, particularly relating to the dialect of his own province; and nothing seemed to please him more than to meet with a Welchman, for the purpose of conversing with him, and comparing the Armorican with the ancient British tongue.

In the year 1799 Laennec was appointed assistant-surgeon in the army of the west, an army directed at that time towards the Morbihan, for the purpose of quelling an insurrectionary movement made against the constituted authorities. In 1800 he arrived at Paris to complete his education. It was at that period, in France, and under the consular government, that the greatest encouragement was given to the study of all the sciences, and more particularly to those of medicine, surgery, and all their collateral branches. The professor's chair was then the reward of a hard fought contest, and *merit* alone could by possibility insure the victory. I trust you will not consider it misplaced if I say, that I hope to live to see the day in this country, when no man shall be permitted to occupy any station in which he has to teach others, without having first passed through the ordeal of repeated examinations — examinations not only of the knowledge he possesses, but of his power of communicating that knowledge. Let me hope that the time will arrive when merit shall be the passport to posts of honour—when we shall no longer be obliged to canvass the suffrages of men who, however estimable in other respects, can be no judges of our professional qualifications—when the present system of election shall be totally abandoned, as a system utterly disadvantageous to the public, and degrading to every honourable aspirant.

It was at that time that the reputation of Corvisart was at its zenith; the force of his example, and the value of his clinical instructions, carried enthusiasm into the minds of all his followers. The star of Bichat, too, was upon the ascendant, soon to shed a new lustre upon the face of anatomy and physiology. Bayle and Dupuytren were the cotemporaries of Laennec; and it is no wonder that, with masters like

these, and a genius like his, he should soon be seen among the foremost in the rugged path to the temple of fame.

He gained the two chief prizes in medicine and surgery, granted by the Minister of the Interior through the Institute of France; after which he became a critical writer; and the first work upon which he exercised his talents was Benjamin Bell's Treatise upon Syphilis. Impressed, as he had been from the commencement of his studies, with the importance of morbid anatomy, he began early a course of lectures on that subject, which he continued for three or four years, Dupuytren giving a course of a similar kind at the same period. Laennec was the first in France to describe the adventitious deposit called by him *melanosis*, and also the "*matière encephaloïde*;" but the latter had been previously made known in England by Burns, under the name of *spongoid inflammation*; by Hey, of Leeds, under that of *fungus hæmatodes*; and by Abernethy, who denominated it *medullary sarcoma*. Dr. Forbes raises a question as to whether Laennec had any knowledge of the disease having been previously written upon in England, and he thinks he had not; but considering that there was then a short peace, I think it probable that the French anatomists must have known what had been going on in England.

But it is from the year 1816 that the great fame of Laennec is to be dated. At that time he was appointed physician to the "Hôpital Necker," an institution having similar objects to our infirmary for diseases of the lungs. He had occasion at that period to examine a young female, who he supposed was labouring under disease of the heart. From that delicacy of feeling which every medical man should possess, he did not like to apply his ear to the chest, though that idea first struck him. He recollected at the moment that, as solid bodies have the power of conducting sounds better than air, it would be possible by such a means to ascertain more than could be done by the hand. He procured a quire of paper, rolled it up tightly, tied it, and then applied one extremity to the patient's chest, and the other to his ear. To his great satisfaction he heard the beating of the heart infinitely more distinctly than it could possibly be felt by the hand. A discovery like this was not lost upon Laennec, and he immediately conceived the possibility of applying the same means to diseases of the chest in general, but more particularly to the examination of the voice. He commenced a series of observations upon different patients merely in relation to the latter object. He then first discovered *pectoriloquy* and its cause. With unexampled ardour he continued his researches; and in the year 1818, only two years after his first discovery, he brought forward his extraordinary work on Diseases of the Chest; a work which, for elegance of composition, for correctness of anatomical description, and for originality of facts, is unparalleled perhaps in the history of medicine.

As you may readily conceive, great opposition arose against his discoveries: his facts were denied, his inferences refused, his instrument ridiculed; and, if it had not been for the manner in which the work was written, for the clearness of his anatomical details, and his personal efforts in proving the facts at the bed-side, no doubt auscultation would have fallen into the same oblivion as the percussion of Avenbrugger had done. Laennec's weak frame gave way under all these exertions, and he retired to his native country. His health to a certain degree became re-established, and he returned to Paris in 1821 to reap the fame of his discoveries, and to extend them. He was shortly afterwards appointed Professor of Medicine to the College of France, and Physician to La Charité. He then prepared the second edition of his work, to which he added the mode of treatment. While executing this task, he again fell into a state of great exhaustion, retired to his native home, and in August, 1826, expired at the age of forty-five years.

Laennec died of consumption, and I have no doubt that he had long believed himself to be predisposed to that dreadful disease. You could not be with him for a very short time without seeing him frequently expectorate, and examine the secretion with great minuteness: indeed, while I knew him, it was his constant habit. No doubt a consciousness of this kind led him to his investigations of pulmonary disease; nor do we find him singular in this respect, for some of the best monographic works we possess were written by authors subject to the diseases they have described. Thus, Corvisart died of disease of the heart; Bayle of an affection of the lungs; Sir John Floyer was himself the subject of asthma. The best work written upon asthma in the English language is by Dr. Bree, himself an asthmatic. These instances might be greatly extended.

Thus, if I be not accused of using language somewhat too ambitious, I would say that Laennec fell a victim upon his own altar; that he suffered the lot of mortality from one of those diseases, the description of which has conferred upon him a crown of intellectual immortality.

CASES OF PHLEBITIS:

With Remarks.

By C. Ingham, M.D.
Surgeon, 29th Reg.
[Communicated by Sir James Macgrigor, Bart.]

A Case of Phlebitis, without apparent organic disease, terminating fatally.

David Shaw, æt. 24, private in the 29th regiment, of healthy constitution and temperate habits, was attacked suddenly on the night of the 19th June, 1832, with a disorder resembling epilepsy, which arose, as facts then shewed, from undigested matter in the stomach. After the abstraction of blood, and free vomiting which ensued, he fell asleep, and on the following day he was quite well again. He took a dose of salts, however; and on the third day he returned to his duty. His arm then became painful; but the bandage, though he felt it to be tight, he left on; and he neglected also to report the uneasiness to the medical gentleman who had bled and attended him.

On the 23d instant, the fourth day from the bleeding, he returned with the detachment to head-quarters*, and came to me, feeling unequal to duty, to shew his arm. The wound was found red and gaping; but, excepting pain, there was no constitutional disturbance. He was sent to the regimental hospital; a purgative of senna and salts was given, and cold applications were directed for the arm.

24th, fifth day.—The state of the arm seemed to be improved: it was less painful, and still the constitution seemed to be unaffected. Cold applications were continued.

25th, 6 A.M.—He was found very unwell. The arm was swollen, and the swelling and tension extended upwards and downwards. Said that he was attacked about two o'clock with rigors, which were followed by febrile symptoms. The pulse was 136, rather small, and unresisting. Tongue white; thirst urgent; abdomen tumid and tense; no stool. An oleaginous purgative was administered, and warm applications were directed to be used constantly to the arm.

In the evening the arm was still painful, and the febrile state remained unaltered. The medicine had not operated. A warm bath, and a purgative injection, and hot linseed meal cataplasms, were ordered.

26th.—One copious feculent dejection after the enema, and a good deal of sleep during the night. The arm was still painful and tense. He felt chilly, yet the skin was hot and dry. Pulse 106, soft and regular; thirst urgent; abdomen softer, and free from pain. The warm applications to the arm were found most comfortable. Full doses of James's powder, and submuriate of mercury, were ordered thrice during the day; warm drinks, and a little sago.

3 P.M.—The arm found hot and painful; some irritability of stomach; abdomen somewhat swollen and tense; pulse 120, small; countenance anxious; thirst urgent. The warm bath and purgative injections were again employed, the antimony omitted, and brandy, largely diluted, administered occasionally.

6 P.M.—Vomiting had ceased since the cordial draughts; arm was less painful; pulse 132, regular. A strong opiate was ordered at bed time, and it was repeated at midnight.

27th.—Slept tolerably well during the night. Rigors came on early in the morning, which were followed by partial heat and sweating over the face, head, and neck. Pulse 112, small; stomach irritable; thirst urgent; countenance anxious; stools feculent; abdomen softer; urine scanty, but of natural appearance. The bath and injections were repeated; wine was ordered every second hour, and cataplasms removed every fourth hour.

28th.—Was delirious, and slept little or none during the night. Pulse 112, small and irregular. Made little or no complaint of the arm. Countenance anxious; bowels slow; abdomen less swollen, and free from pain on pressure. The injection renewed. Opiates were ordered, and the cataplasms continued.

29th.—Had slept at short intervals during the night; but when awake, had been delirious. The fore-arm was hard and tense, the arm less so. Pulse 120, small; thirst very urgent; stomach irritable; tongue loaded; bowels not open. Temperature in the right axilla 103°; in the left, 102°.

* A weekly guard stationed at Grand River, two miles from Port Louis.

A purgative injection administered. Camphor, opium, and the other means continued.

30th.—Arm about the wound scarcely painful, but the fore-arm tense; and two or three red lines were seen in the course of the cephalic vein. Passed a sleepless night, with delirium, vomiting, thirst, and occasionally distressing hiccup. Abdomen swollen; dysuria. Pulse 120, regular; jactitation, lassitude, and anxiety of countenance. Temperature, right side, 103°; left, 104°. One feculent dejection.

A purgative injection was administered, Laudanum and Nitric Æther prescribed, Brandy continued, and Caplasm.

2 P.M.—Respiration found difficult; face of purple hue; pulse 130, throbbing; delirious, and frequent efforts to quit the bed. Remedies continued.

July 1st.—Had passed a better night, though sleepless. He made no complaint of pain in the arm, and he raised it, seemingly with ease; but the fore-arm was swollen and tense anteriorly, nearly in its whole extent. Pulse 120, regular; tongue parched, red at the apex and sides. Temperature 104 deg. in the right axilla, 102 deg. in the left. Had voided urine, and passed one feculent stool.

2d.—Had been delirious throughout the night. Pulse 124, throbbing; face of a dark purple hue; respiration embarrassed; abdomen tumid, but not painful; frequent sighing and jactitation; tongue brown and parched; thirst urgent; dysuria; no stool.

A Calomel bolus was given. A purgative injection. Cordials continued.

3d.—Moribund; and his death took place at four o'clock the following morning.

Post-mortem.

The examination of the body was made nine hours after death. The countenance still bore traces of the purple hue, and of the anxiety which had characterized it, and which bore resemblance to that of one suffering under tetanic spasm. The body was little, if at all, emaciated; the limbs were very rigid, and the diseased arm was undergoing decomposition more markedly than the other. The head was examined carefully, but no appearance presented itself, either in the brain or its membranes, which could be held to be the result of the previous disorder. The quantity of fluid in the ventricles was minute. In the chest some firm adhesions existed between the pleuræ on both sides, but the heart and lungs were sound; and the abdominal viscera all were apparently uninjured.

The limb was slightly enlarged, and livid; and the wound, where all the mischief had arisen, was small, but its orifice was patent, and rather sloughy. The cephalic vein was thickened, hard, and impervious in parts, for a considerable distance above and below; the cellular substance in its course was condensed, and so intimate were the adhesions between it and the vein, that it was not possible, by careful dissection, to remove it entire. The vein had, for an extent of about four inches from the wound, a ligamentous appearance; its cavity was but partially obliterated, for portions of it, when cut into, were pervious; the inner membrane was not particularly red; a small purulent depôt was found close to the vein, near the wrist, and one or two similar ones in the course of the vein in the arm. The subcutaneous veins in the forearm were thickened.

The post-mortem examination bore out the decision of Dr. Baillie, "that some diseases consist only in morbid actions, but do not produce any change in the structure of parts: these do not admit of anatomical inquiry after death." The cause of the intense constitutional derangement ending in death, had left no trace; for the alteration of structure in the arm was neither of a kind, nor to an extent, to account for the consequences which had resulted from its influence over the system. It may be added, too, that the limb was never so much affected as, apart from the sympathy of the whole, to cause uneasiness. Redness, swelling, and tension, are often found greater where danger to life is never apprehended; and the pain was so trifling at times (and during the height of the disorder), that it was necessary to caution the patient against raising the arm from the pillow on which it lay, and assisting himself in the application of the poultices and fomentations.

The cause of this disorder was, it may be assumed, inflammation of, and consequent change of structure in, the vein; and that that inflammation acted either by continuity of surface upon the right

side of the heart, and so indirectly, or else by an absorption of the fluids, the products of this augmented action, directly, upon the brain; which was the source of all the symptoms.

The brain was disturbed, as was the ganglionic system (so to express myself) from the commencement. Headache, rigors, purple hue of countenance, anxiety, jactitation, vomiting, dysuria, swollen tense abdomen, and, above all, hurried action of the heart and circulation.

In saying that the brain was disturbed we come far short of the knowledge which is desirable; for we know neither in what that disturbance consisted, nor how the disorder was communicated through the system: we witnessed the phenomena, but these left no tangible signs.

There was not one trace certainly of inflammation. It would not have been possible to have distinguished the brain or the thoracic viscera of this subject, from one dead under other circumstances: and pathology seems to offer therefore (save what may be gathered and inferred from the phenomena during life) but little solid information.

It has been conjectured, I am aware, that the pus which is found very universally in small depôts in the course of the vein in these unhappy instances, is absorbed, and so becoming a poison, acts deleteriously upon the brain. This opinion is probable; for we know the sudden and deadening influence which results from the introduction of air, or other fluids, into the vascular system.

Pus was not found, however, in the course of the examination, in any vessel, not even in those portions of the diseased vein, which were still partially pervious. But may not the mucous fluid* which lubricates the inner tunic of the venous system (acting probably as a sheath from the contact of the blood) have been augmented, or deteriorated, or altogether stopped? or, may it not have been changed in quality? may not some change, or changes, so produced, have acted deleteriously upon the brain?

Pathology here, as unhappily in many other affections, sheds no light on the nature of the ailment; it shews only what it was not; and if any good arise from narratives like this, it results from making apparent the value of precaution, and the necessity for watching the first signs of danger. Had the man complained when uneasiness was first felt, or had due inquiry been made, that local injury might have been prevented, which, once it had exerted its influence upon the constitution, became the source of suffering and of death.

With respect to the treatment, it was directed in great measure according to the symptoms. When the patient was first seen at the Military Hospital, the disease was still apparently local and mild: simple means, with confinement to bed, were used, but symptoms of specific disorder soon manifested themselves, and the indication seemed to be that the system should be supported and quieted,—should be borne through, if I may so say, a given period; when the morbid influence having ceased, and its consequences having subsided, the body would have been left liable only to its wonted agencies. This period of calm, or cessation of disease, unhappily (although suffering was mitigated), was not attained: disease seemed to have,—without relation to the local injury, the parent of all the ill,—entire possession of the frame; and it continued with partial vicissitudes and modifications, but little, if at all influenced by the means employed, until the 10th day after admission, when life was exhausted.

The features of the case were so forbidding all through, that prognosis from the moment that the constitution participated in the disorder, was unfavourable: yet still hope was not finally abandoned, until the state of coma, livid countenance, and stertorous breathing, seemed to indicate a change of structure in the brain which precluded all possibility of recovery.

July 1832.

A Case of Phlebitis, with organic mischief in the Chest, which terminated favourably.

Private Henry M'Ardle, ætat. 22, 29th regiment, an athletic young man, of sanguine temperament, was admitted into the Regimental Hospital, Port Louis, on the 10th of March, 1834, with an irritable sore on the glans penis, for which he was bled on the 11th, and placed

* "En-dedans, la membrane interne du système vasculaire est sans cesse humectée d'un fluide muqueux, dont les sources sont encore ignorées, et qui la garantit de l'impression du sang avec lequel elle est en contact."—*Bichat, Traité des Membranes.*

upon the strict antiphlogistic plan of treatment: he was confined to bed, and cold evaporating lotions were locally applied. On the 25th, the sores being stationary, with a hardened base, he was again bled from the same place, namely, the median basilic vein of the right arm, the former puncture having healed by the first intention. On the 26th, about 9 o'clock, A.M. he was seized with severe headache, and other symptoms of ardent fever; and at 2, P.M. the pulse was 136, and vibrating; headache intense; skin burning hot; thirst urgent; and countenance anxious. When questioned as to the state of his arm, he said it felt stiff and painful; and, on examination, it was found that it was somewhat swoln and tense from the seat of the puncture, ascending upwards in the direction of the vein, and that the lips of the wound made by the lancet were patent, which he attributed to the bandage having been put on too tight by one of the patients the preceding night, as it had come off accidentally.

A large emollient poultice was applied to the arm; a calomel and colocynth pill administered; and at 6, P.M. the febrile symptoms were found to have abated, and the arm was less painful. The medicine not having operated, pulv. jalap. c. 3ss. was prescribed, and the poultice renewed. At 8, P.M. the medicine had operated once, and he felt easier; pulse 112, soft; cooler skin; violent thirst.

Enema purgans. ℞ Calomel. gr. ij.; Pulv. Antimon. gr. iij. M. 3tiis hor. sumend.; et app. Cataplasm. emoll. 3tia quaq. hora.

27th.—He slept little during the night from the pain of his arm, and there is considerable tension and swelling extending from the puncture upwards in the line of the vein, and there are several red lines perceptible in the integuments, running in the direction of the axilla; pulse 94; skin hot; thirst urgent; countenance anxious; one scanty motion in the night.

Olei Ricini, ℥j. statim sum. Contin. cataplasm. emoll. applic. brachio.

6, P.M.—He was seized at 3, P.M. with an exacerbation of fever, which still continues; respiration laborious, and countenance anxious; pulse 118, vibrating; the arm is very tense and painful.

App. Hirud. sex brachio, et postea contin. catap. emolliens.

℞ Calomel. gr. iv.; Ext. Opii. gr. ½. M. fiat Pil. 3tiis hor. sumend.

8, P.M.—He feels easier, but he is very restless, and has no inclination to sleep; skin hot.

℞ Tinct. Opii, gtt. xlv.; Vini Antim. gtt. xxxv.; Aquæ Menth. Pip. ℥i. M. s. s.

28th.—He slept a good deal during the night. There is less febrile disturbance, and the arm is less painful this morning. The leeches were not applied, as none could be procured in the town. Pulse 92, soft; skin hot; thirst urgent; bowels slow.

℞ Calomel. gr. v.; Ext. Colocynth. c. gr. vjss. Contin. cataplasm. emoll. Imperial drink, ad libitum.

6, P.M.—The medicine has operated thrice; fever abated; and arm little painful.

7, P.M.—Seized with acute pain in the right side of the chest, impeding respiration, which is hurried; and he has great difficulty in swallowing; apparently from spasm in the muscles of deglutition. Pulse 112, small and vibrating; countenance anxious; thirst very urgent; skin hot.

℞ Tinct. Opii, gtt. xlv.; Spirit. Æther. Nit. 3ss.; Vini Antimonialis, gtt. xxv. M. s. s.

29th.—He slept well during the night; pain of side less; he can now swallow without any difficulty; and the arm is free from pain, the swelling and tension is more circumscribed, and the red lines which extended towards the axilla have disappeared. Pulse 92; skin cooler, and countenance less anxious; thirst urgent, and bad taste; tongue coated; bowels open.

℞ Mist. Camph. Liq. Ammon. Acetat. sing. ℥iv. Sumat ℥iss. 3tia quaq. hora. Contin. catapl. emoll. brachio.

1, A.M.—Pain in side more acute; pulse 94, firm; skin hot; thirst urgent.

Fiat statim venesectio.

℞ Calomel. gr. iij.; Ext. Opii, gr. ½. M. 3tiis horis sumend.

6, P. M.—Blood (lb. iss.) buffy and cupped. He does not complain of any pain; pulse 82, soft; skin cool; little thirst; bowels open.

30th.—He slept well during the night, and he feels much better to day; mouth sore, with slight ptyalism. The arm is free from pain; the swelling is cir-

cumscribed, and more elevated in the centre, which gives a sensation of indistinct fluctuation to the touch.

Habeat Garg. Alumin. Contin. catapl. emolliens.

31st.—Pulse 84, soft; arm free from pain, little tense, and the swelling is subsiding. He has still pain in the side on making any exertion; mouth continues sore; skin rather hot.

Pulv. Jacobi, gr. iv. 3tiis hor. sumend.

April 1st.—He continues to improve; bowels natural.

2d.—He slept well during the night, and he feels much better to day; has some appetite. The arm is quite free from pain; the wound is healed; and the swelling has nearly disappeared.

6th.—He continued to improve until last night, when he was again seized with acute pain in the right side of his chest, accompanied with urgent cough and hurried respiration. Pulse 96, sharp; skin hot and dry; thirst urgent.

Fiat statim venesectio.

2, P.M.—Blood (lb. j.) buffy and cupped; pain of side less; cough continues urgent, with some mucous expectoration; pulse 90, soft.

℞ Calomel. gr. ij.; Ext. Op. gr. ¼. M. 3tiis hor. sumend.
Appl. Emplast. Lyttæ pectori.

6, P.M.—Less cough, and he is nearly free from pain.

Haust. Anod. Antim. h. s. s.

7th.—Vesication produced; slept well during the night; cough less urgent; and pain has nearly subsided; pulse 84, soft; tongue coated; and bad taste.

Contin. Pil. ut heri.

8th.—Cough urgent during the night, with copious mucous expectoration; pain has subsided; pulse 88, soft. The bowels have acted.

℞ Magnesiæ Sulph. ℥vj.; Infus. Senn. ℥iiss. M. s. s.

Vespere.—Cough urgent, and the expectoration has assumed a purulent character; respiration hurried.

℞ Mist. Camph., Liq. Ammon. Acet. aa. ℥ss.; Tinct. Scillæ, Tinct. Digital. aa. gtt. xv. M. fiat haust. 3tiis hor. sumend.

9th.—He had urgent cough, with dyspnœa, during the night; expectoration copious and muco-purulent; perspires much; and he is weak and emaciated; pulse 92, soft; bowels regular.

Contin. Mist. ut heri.

10th.—Cough and expectoration continue; pulse 84, soft; bowels open.

Contin Mist.

11th.—He slept better, and had less cough during the night; pulse 60, irregular, and intermitting; perspired much.

Omitt. Tinct. Digitalis. Contin. alia.

12th.—He continues to improve; pulse 42, intermitting; he has some appetite; bowels slow.

Pil. Aloes et Myrrh. et Ext. Colocyn. c. ut antea sumend.

13th.—He slept well during the night, and has little cough or expectoration; pulse 40, irregular, and intermitting; bowels open.

Contin. ut heri.

From this period he progressively improved, the constitution having continued under the influence of digitalis until a few days before he was discharged from the hospital, on the 13th May, in good health.

The favourable termination of this case may, I think, be mainly attributed to the restorative powers of a strong and healthy constitution; and, in this view, the treatment was conducted,—to restrain and moderate the constitutional disturbance which was set up, for the purpose of arresting the local malady, that had arisen from some undefined cause. For the secondary affection of the chest, induced (as it has been generally supposed in similar instances) by the inexplicable agency of the nervous system, medicines of the soothing and antispasmodic class were prescribed; and this affection having terminated in organic disease, moderate bloodletting was employed, and digitalis was given in large and frequently-repeated doses, so as to bring the constitution under its influence rapidly, which, having been accomplished, the most urgent symptoms began to subside, and progressive amendment took place; the body, which had been much wasted, recovered its wonted plumpness; the general strength was restored; the patient was discharged to duty; and he has since continued in the enjoyment of robust health. It may be worthy of observation that the circu-

lation continued an unusual length of time under the influence of medicine, and with the happiest effects apparently, the pulse never exceeding 46, until within a few days before the patient was discharged.

Port Louis, Mauritius,
June 18, 1834.

REPORT OF CASES

OF

CONVULSIONS OCCURRING IN PUERPERAL WOMEN.

By Fleetwood Churchill, M.D.

Licentiate of the King and Queen's College of Physicians in Ireland; Physician to the Wellesley Lying-in Institution; and Lecturer on Midwifery in the Medico-Chirurgical School, Digges-Street, Dublin.

To the Editor of the Medical Gazette.

Sir,

If the following cases of puerperal convulsions appear to possess sufficient interest, you will oblige me by inserting them in your useful journal. They occurred (with one exception), in the practice of the Wellesley Lying-in Institution, under the care of Dr. Maunsell and myself; and are related as they were entered in the case-book.

I have the honour to be, sir,
Your obedient servant,
F. Churchill.

104, Stephen's-Green, Dublin,
Oct. 8, 1834.

Case I.—*Hysteric Convulsions.*

On the evening of February 2d (Sunday), I was sent for to see Mrs. ——, in Camden-Street. I found her unable to speak, but evidently hearing me when I spoke to her, as she attempted to answer, and could not. She breathed naturally, and her pulse was calm and soft. She was six months gone in pregnancy. On placing my hand on the lower part of the abdomen, I could feel the uterus contracting; and at each contraction she tossed herself about on the bed. Except at these times, I saw no convulsive efforts. The women in the room spoke of the convulsions as occurring occasionally. No frothing at the mouth; no distortion of the face, or biting of the tongue; head cool; pupils contracted on the approach of light; no hæmorrhage; skin of a natural colour and heat.

The labour went on, and I delivered her of a female fœtus, about six months old. Hæmorrhage neither accompanied nor followed the delivery. In due course of time the placenta was expelled, and the uterus firmly contracted.

From the absence of epileptic or apoplectic symptoms, I was led to believe this one of those cases described by Burns, Dewees, and others, as hysteric convulsions; I therefore ordered

Træ. Opii. gtt. xx.; Træ. Asafæt. ʒi.; Aq. ʒi.

to be given directly; and enjoined quiet.

Upon making further minute inquiry as to her previous state, I found that she had been complaining for the last fortnight of feverishness, but I could make out no local disorder. The morning of the day on which I saw her she complained of thirst, and drank half a pint of mulled porter. She spoke as usual, but seemed heavy. Soon after, her husband left her; and on his return she could not speak, and had several convulsions.

I called early the next morning, and found that she remained much in the state I left her the night before, save that she had fewer convulsions, and seemed more sleepy, until seven A.M., when she died. The skin after death assumed a jaundiced hue. I could not obtain permission to inspect the body.

Remarks.—This case appeared to me interesting, even although the details are so slight. It establishes, I think, the existence of a species of convulsion distinct from the epileptic or apoplectic, and yet as grave in its results. Every symptom, or nearly so, which marks those species, was wanting, except the inability to speak: there appeared no greater lesion than the disturbance of an hysteric paroxysm; the head was cool; there was no foaming at the mouth; no distortion of the features; no stertorous breathing; a quiet pulse, and cool skin; and yet, without any addition to these symptoms, she died. How can her death be explained? I profess myself utterly in the dark.

Case II.—*Epileptic Convulsions.*

On Monday evening, February 11, 1833, I was requested by a pupil of

the Dispensary to see a poor woman in Ship-Street. The whole of the preceding night she has complained of great pain in the head. She has received no blow or injury; is a sober, quiet woman, and is at her full time. On visiting her this morning, the pupil found her headache continuing, with turgidity of the veins of the neck, and a quick strong pulse. She was perfectly sensible, but had had several convulsions. He bled her to 16 oz., which had no effect, however, upon the paroxysms.

I found her nearly insensible, incapable of answering any questions, but constantly crying out "Oh, my head!" The convulsions recurred every three-quarters of an hour: during the paroxysm, the body and limbs were strongly convulsed; she frothed at the mouth; her features were distorted, and her hands forcibly clasped. After a few minutes this subsided, and she breathed heavily and rapidly, succeeded by long-drawn inspirations, gradually becoming more natural. She slept the whole time until the next fit: pulse quick and firm, though not full. Shortly after my arrival, the uterus was observed to contract for the first time. The bleeding was repeated, the head shaved, and a cold lotion applied to it.

On making a vaginal examination, the head of the child could be felt at the os uteri, through the membranes. As the parts were dilatable, I ruptured the membranes, and the waters being discharged, the pains became regular, though not very quick. The fits continued, and in about three hours a dead child and the placenta were expelled without hæmorrhage. An opiate enema was administered, and a blister applied to the back of the neck. The surface became cooler, and the pulse weaker.

Feb. 12th.—Fits continued all last night, with intervals of half an hour or an hour. She neither spoke nor appeared sensible; pulse quick and strong; surface and head warm. I opened the temporal artery, and took away 20 oz. of blood: the pulse became weak and her face pale, but she evinced no sensibility. Towards night the violence of the convulsions diminished somewhat, and at one o'clock in the morning they ceased entirely. In the morning (Feb. 13th), she took some tea, and became sensible, recognizing some of her attendants. A cathartic clyster was given, and purgative powders, which operated well.

Delirium came on towards evening, and continued for some days, and then gradually subsided. She remembered events up to the period of her seizure, but nothing afterwards.

CASE III.—*Epileptic Convulsions after Delivery.*

Sept. 19th, 1833.—Margaret Dalton, æt. 23, of an apparently broken-down constitution and phlegmatic temperament, subject to slight hysterical paroxysms, and, during her pregnancy, to œdema of the lower extremities, which extended even up to the parietes of the abdomen, was safely delivered of her first child, a healthy daughter, after a natural labour of twelve hours duration, in the course of which nothing occurred which could lead us to expect the dreadful attack she was about to suffer. Her bowels had been well freed by medicine and injections both before and during the course of the labour. Seven hours after the child was born, she was suddenly seized with convulsions, which were very violent, and came on at very short intervals: in one which I witnessed, her body was violently raised from the bed, and thrown backwards, like a strong paroxysm of tetanus; her hands were clenched, and she frothed at the mouth. It lasted for about two minutes, and appeared to be shortened by dashing water into the face. In the intervals of the fits, she lay in a kind of light coma, occasionally opening her eyes, and tossing herself about. Pulse very quick, and rather hard; all the while perfectly insensible. Dr. Maunsell saw her about 11 A.M., and by his directions she was bled to ʒxvi., had a turpentine enema, and a bolus of calomel and jalap; her head was shaved, and cold applied to it.—Two P.M. Had one fit since last visit; coma continues; face pale; pulse 128, softer. The injection was returned. Ordered turpentine stupes to the abdomen, and a blister to the head.—Seven P.M. Continues in the same state: pulse so quick as scarcely to admit of being counted; had three fits since one P.M.; no discharge from the bowels; the abdomen, however, is soft. Repeat the enema and fomentations.

20th.—Better; bowels have been freed several times; urine scanty; pulse 155, more full and soft; pupils natural. She had one fit at three this morning, which was less violent than the preced-

ing ones. She is now in a sleepy state; answers yes and no, and now and again calls for drink. At one time she said she was very weak. Ordered

Cal. gr. ij.; P. Zing. gr. iij.; ft. bolus, ter in die sum.

Evening, much better; recognizes her friends. In consequence of her having taken, without orders, a senna draught after the bolus, she was purged violently during the day; urine much increased in quantity; pulse 120; tongue clean and moist; still complains of thirst, and asks for drink. Ordered

A blister to the neck and a fœtid enema.

From this time she recovered rapidly. She retained no recollection of her labour, of her having engaged a midwife, or indeed of any event for three or four days before her confinement.

CASE IV.—*Abortion in the Sixth Month, with Epileptic Convulsions.*

Mary Doyle, a strong-looking woman, with thick, short neck, and of a leucophlegmatic temperament, on the morning of the 10th of December, 1833, at three o'clock A.M., was seized with pain in the epigastric region, which increasing, she sent for medical aid. She was visited at half-past four o'clock A.M., and found tossing herself about in bed, endeavouring, by change of position, to procure herself a moment's ease. Her pulse was quick and hard; tongue white. She complained that her heart would burst; and on examining, I found considerable tenderness over the epigastrium. She had retched frequently, but had thrown up nothing except thick mucus. She had no labour pains. She was somewhat more than five months gone with child; has had six children, of whom the first is living, but the last five she has aborted at nearly the same period of pregnancy (the sixth month): she had had convulsions in her last labour but one.

On examining per vaginam, there was found no dilatations of either the os uteri or external parts. A vein was opened in her arm, and about ℥xv. of blood abstracted; and having ordered fomentations to her epigastrium, together with a few drops of laudanum, she was left, the pain very little mitigated. At nine A.M. she was visited, and found quite insensible; breathing stertorous; pupils widely dilated; eye-lids half closed, and iris insensible to the stimulus of light; pulse quick and hard. The fomentations had afforded her relief for a short time; but about half-past six she had been seized with a fit, which had recurred at intervals of half an hour. She gradually recovered from insensibility, so as to answer when loudly spoken to, and was quite conscious of an examination, which it was thought proper to make, in order to ascertain if labour had made any progress, but the parts were found precisely in the same condition as before. In half an hour she had another paroxysm. Seeing, therefore, the difficulty of the case, Dr. Maunsell was sent for at 10 o'clock A.M. Dr. M., on his arrival, ordered ℥x. more blood to be abstracted, a turpentine enema administered, head shaved, and cold applied, as also affusion of cold water to the face during the presence of each paroxysm. A bolus of cal. and jalap ordered at 11 A.M. Three quarters of an hour between each paroxysm. No interval of sensibility. The bolus had been introduced into her mouth, but only part had been swallowed, the rest having dribbled away with the saliva; enema had operated but imperfectly. No appearance of labour. Ordered by Dr. Maunsell

Ant. Tart. gr. iv.; Aq. ℥viij. sumat. ℥i. 2da quaq. horâ.

Three P.M.—Paroxysm more frequent; pulse very quick, and irregular; lies still insensible; one pupil dilated, the other contracted; breathing stertorous. Had vomiting after each dose of tart. emet., but was now unable to swallow any thing. Ordered another turpentine enema, which was rejected almost immediately, little altered.—Four o'clock P.M. Drs. Maunsell and Darley saw the patient. No amelioration in the symptoms; paroxysms rather more severe; pulse 120, small, and occasionally irregular. ℥x. of blood were abstracted, which not suspending the convulsions, and her pulse not warranting the abstraction of more, Drs. M. and D. having examined per vaginam, and found no dilatation of the parts, decided on rupturing the membranes, which was done by Dr. Maunsell, and exit given to the waters, which were of a somewhat darker colour than usual. A small quantity of very turbid and chocolate-coloured urine was also drawn off. Ordered

A blister to the neck; Hydr. Submur. gr. v.

which was introduced upon the tongue, but could not be got down.—Nine o'clock. Drs. M. and D. saw her again. Lies in the same state of insensibility: pulse very quick and feeble; had had several paroxysms since. After some time, she appeared about having another paroxysm, which seemed to be averted by a plentiful dashing of cold water on the face (to the stimulus of which she was for the first time sensible); at least its character seemed so much softened, as hardly to deserve the name of convulsion. This was quickly succeeded by pain of a peculiar character: she now tossed about her arms, alternately extended and flexed her legs; her face being at the same time expressive of agony. The parts were now found to be well dilated, and labour considerably advanced; and shortly after a female fœtus was expelled (twenty minutes after nine o'clock). No pulsation in the funis. The placenta was felt in the vagina, from which it was extracted by Dr. Maunsell in twenty minutes. When leaving her, she lay tranquil, and seemed asleep; no opiate was therefore thought necessary.

December 11th; half-past ten o'clock A.M.—Had had no paroxysm since three A.M., but had three previously; the last unusually severe, both in duration and violence. Still remains insensible; respiration 48 in a minute, and laboring; pulse 160, weak, and fluttering.—Three P.M. Breathing more laborious; pulse not to be felt; death mucous râle; spasmodic attempts occasionally at extending the arms; eye-lids semi-closed, &c. Some purging medicine had been ordered since morning, but it could not be swallowed. She lingered in this condition for an hour, when she expired, thirty-six hours after first attack. No examination could be obtained.

Remarks.—The foregoing three cases present well-marked symptoms of an epileptic character. In the first only of these were there any premonitory symptoms; and in one only was there any decided effects from the remedies employed.

The termination of case 2 in mania was very remarkable. I think I have met with but one or two similar cases in writers on this subject. The delirium continued some time; and once she made a violent attack on her attendants: during this time her appetite was good, and her bodily health improved.

None of the patients could recollect being attacked with the disease.

Case V.—*Apoplectic Convulsions.*

For the following case I am indebted to my friend, Dr. Aston, of the Cork-Street Fever Hospital.

Catherine Costello, aged 18 years nine months, of low stature and corpulent figure, complained first of severe headache on Wednesday, 2d January, 1833. The pain was more violent than any of the kind she had ever experienced. Sickness of stomach set in nearly at the same time, and she continued throwing up green bilious matter at intervals during the entire day: the bowels were confined for four days; the face and upper extremities were very much swelled, which commenced two days before, and continued gradually to increase as the headache became more intense. She wanted about seven weeks to complete the usual period of utero-gestation. I was sent for in the evening: she was walking about the room, but suffering most acutely; the face was swelled to such a degree as almost to hide the eyes, and her speech was somewhat thick. The motion of the child had not been felt all day. As she had an objection to bleeding, I omitted it for the present, and directed some opening medicine, to relieve the bowels; and having given the requisite instructions, I left her; but in a few hours after, her husband came for me in all haste, requesting my immediate attendance, as she had had a fit, and appeared to be in a dying state. Upon further inquiry, I was told that the pain in the head got much worse, when suddenly the eyes became fixed, the face distorted, convulsive motions ensued, and ended with stertor, which must have been of short continuance, as no such symptoms existed when I visited her a short time afterwards, although she was unconscious of any thing that happened until after venesection, which I immediately performed, to the extent of 18 or 19oz., from which she experienced almost instantaneous relief. The heat of skin was much greater than natural; thirst extremely urgent; pulse pretty frequent, but inclined to hardness: after venesection, it became quicker; shortly after, slower and softer, until it gradually

came down to the natural standard. The bleeding was continued until decided relief was expressed. As she was now comparatively free from pain, and disposed to rest, I left her, after giving the necessary directions.

On the following morning she was much better: swelling of face and upper extremities much reduced; bowels freed thrice. No swelling of lower extremities has occurred at any time.

4th.—Out of bed, and walking about, nearly as well as usual. No thirst: has some appetite. Complains of pain across the back; otherwise well; bowels were confined. Opening pills were ordered.

She was safely delivered the following day, and had no recurrence of the attack.

Case VI.—*Apoplectic Convulsions.*

Mary ——, æt. 30, was attended in her first confinement by a pupil of the Wellesley Institution, Tuesday, November 20, 1832. The labour was natural, and terminated within a moderate time. She had complained of severe headache during her labour, and seemed sleepy towards the conclusion. After asking some questions of the attendants, and then settled to sleep, some irregular twitching motions of the limbs were observed, but nothing more. Her breathing shortly became loud and heavy; and I was sent for. I found her perfectly insensible; pupils fixed and contracted; breathing stertorous; heat of head not much increased; abdomen distended with flatus; muscles perfectly flaccid; pulse firm, though not full. I instantly bled her, cut off her hair, applied cold to the head, a blister to the nape of the neck, and hot fomentations to the feet—but in vain; for without any interval of improvement, she sunk, and died during the night.

A post-mortem examination was permitted, and we found a great effusion of blood, filling both ventricles and the serum occupying the base of the skull. On further inquiry, I found that she had been seduced and betrayed, and that her situation had preyed upon her spirits, causing severe headaches, for some weeks previous to her confinement.

Remarks.—These last two cases differ very decidedly from any of the preceding ones: both had premonitory symptoms, and in both the convulsions assumed a milder character. Case 5 answers exactly to Abercrombie and Lallemand's description of simple apoplexy without effusion; and the treatment was as successful as in their cases. Case 6 was, in fact, apoplexy from effusion—the slight convulsive motions taking place probably at the commencement of the effusion.

Two or three observations, by way of resumè, may be permitted.

1. The cases I have related mark out pretty clearly three distinct species of puerperal convulsions, as noted by Dewees, &c.—the hysterical, epileptic, and apoplectic; all of which may prove fatal, though none are necessarily so, except the apoplectic from effusion.

2. According to authors, the two first species may prove fatal, and yet leave no pathological changes observable after death.

3. In the two first kinds, no inference can be made as to the exciting cause; of the two latter, probably the predisposing were, in case 5, the plethoric habit of body and the constipation; in case 6, continued grief; and in this the exciting cause was manifestly the interruption to the return of blood from the head during the labour pains.

4. The symptoms differ in each species: in the hysteric we find less convulsion, some twitching and tossing about, and generally sobbing, without violent contraction of limbs, contortion of face, or stridulous breathing. In the epileptic, we have, in addition to the insensibility common to all during the fit, violent convulsions, twitching of the body, frothing at the mouth, biting of the tongue, distortion of features, with stridulous breathing at the termination of each fit. In the apoplectic, the fit is milder: convulsive motions occurring at the commencement of the attack, heat of head, flushed face, stertor, contracted pupil, and flaccidity of muscles, distinguish it from the other species.

5. That our prognosis should be guarded—for although grave, yet, except in apoplexy from effusion—the case is not hopeless.

6. In the two first kinds, the removal of the child by *natural efforts* is desirable, though it would be questionable practice to have recourse to art. Except in the third form, bleeding appears of doubtful value: blisters, cold to the head, and purgatives, produced more apparent effect.

CASE OF EXANTHEMA AND NARCOTISM,

From the External Application of Hops.

By John Badham, M.D.

Mary Bell, æt. 14, and of a healthy habit of body, applied for advice, on the 26th of September last, for symptoms which, although on the decline, appeared to me even then of a sufficiently interesting character to deserve being detailed in my case-book; and as I have not been able to find a case of the kind recorded by any authors, English or foreign, I shall be glad to hear whether any of your correspondents have, in the course of their practice, met with a similar one. This little girl had been engaged in hop-picking for a week, during which she was in the enjoyment of perfect health.

On the morning of the 24th, there being a sharp frost at the time, her hands became chapped, and she put them into the hop-bin to warm them. Shortly after this, she began to feel a tingling or smarting sensation in the hands, as if she had been stung by nettles; and having frequent occasion to pass her hands over her forehead, to arrange her hair, the face became similarly affected. In a few hours afterwards, a distinct cuticular efflorescence appeared, accompanied with a strong disposition to sleep. When taken home, the feeling of somnolency was such as to require the constant vigilance of the family to keep her awake. Her vision was so much impaired that she could not distinguish between objects the most dissimilar; a plate of eels, for instance, appeared like mushrooms. Towards evening all efforts at rousing her attention failed, and she fell into a profound slumber. In the morning her face was covered with a deep erythema, and had swelled extensively; her eyes were quite closed by the tumefaction of the eyelids. She slept substantially through the whole of that day, but once or twice complained of pain in the forehead. Opening medicines were administered, but failed in procuring a stool. On the evening of this day the hands and face were literally covered with vesicles, some of considerable, some of lesser size, which, continuing to grow larger, at length began to burst, first in the hands, then in the face. After this a considerable mitigation in all the symptoms took place; the face became reduced in size, and a healthy desquamation soon followed. The eyes, which had suffered from the attack, though less inflamed, were still red, on the fourth day, when she presented herself to me; and there was also an appearance of *small scales* on the face and forehead; elsewhere the desquamation was general; the erythema was dying away, but a thin ichorous discharge kept oozing from small abraded patches between the fingers. She still had headache, and appeared heavy, but was evidently convalescing without medicine: however, as her bowels were confined, I gave her saline purgatives, with the addition of a little nitre and sulphur, and ordered the hands to be dusted with some absorbent powder. These means, with the additional aid of a dose of calomel and colocynth, completed the cure which had already been commenced by nature.

The interest of this case appears to consist, first, in its appearing to prove the physiological fact of cutaneous absorption; and, secondly, because it discovers a new and hitherto unsuspected acrid principle in the hop.

Worksop, Notts,
Oct. 1834.

HYDROTHORAX AND HEART DISEASE,

AS CONNECTED WITH

RHEUMATIC AFFECTION.

To the Editor of the Medical Gazette.

Sir,

During the last thirty years I have often observed that persons who, in early life, have been subject to rheumatic inflammation, have frequently, at a later period, suffered from disease of the heart, and sometimes of the pericardium, not unfrequently producing hydrops pericardii; and when neglected, or not properly treated, hydrothorax and general anasarca have set in, attended by all the distressing symptoms usually connected with them. In some instances I have seen gouty inflammation produce disease of the heart, which, though little noticed during life, has yet ended in sudden death. The only symptoms complained of during life have been, perhaps, a little shortness of breathing on extra exertion, or some slight sense

of palpitation of the heart, which had been attributed to the stomach. In other instances there is more immediate pain, which is often felt in the left arm or shoulder. Where the heart alone is affected, I have seldom met with cough; but where the pericardium is primarily affected, or any of the membranes in its neighbourhood, it generally is attended with a dry tickling cough. But the greatest inconvenience is found upon increased action of walking, particularly up hill or up stairs; in which cases the pulse is generally excited. I invariably find bleeding, purging, or diuretics, as the case may require, the only effective remedies; for, in cases that I have examined after death, I have often found traces of inflammation either in the heart or pericardium, or hypertrophy of the heart, or disease of the valves, where the patient did not complain of pain in the part. In most of those cases there was a florid countenance, and generally a quick pulse, and very sharp. The intermission does not come on in general, in the younger subjects, till some disorganization or effusion takes place; but even then I have found it may be removed, by removing the cause.—I am, sir,

Your obedient servant,

Wm. Jones.

Lutterworth,
October 9, 1834.

I was called to T. B.. aged 67, who had been unable to lie down for nearly three weeks. I found the countenance bloated; the lips blue, or purple; the pulse intermitting every second or third beat; the legs and thighs enormously swollen; the scrotum so large that the penis was quite hidden; the abdomen very tumid, and the skin œdematous; respiration very quick and laboured. I found he had been treated generally for dropsy; that he had been a hearty man, lived freely, and had no complaints except occasional rheumatism. I immediately ordered him a brisk dose of calomel and colocynth, and gave him a dose every night, for four or five nights; had the scrotum punctured; drew off a large quantity of fluid; applied a blister to each leg, kept up brisk action of the bowels, and excited the action of the kidneys by calomel, digitalis, and squills; and kept down the febrile action of the system by neutral salines. In six or seven days he could lie down; the whole of the water in the chest was absorbed in three weeks, and the pulse became regular; and in a month's time, the only symptoms he had were debility, for which he took, for a short time, the infus. gent. comp., with a little sulph. magnesia for a short time, when he was quite well. About ten years afterwards I saw him in perfect health, having had no return of his disease.

I was called to a patient, æt. 46, who had a very large family; had been ill, she informed me, several months. She had ascites, with great anasarca of the legs and thighs; pulse intermitting, and very short of breath; tongue thickly furred; great thirst; and unable to lie down. I put her upon the antiphlogistic plan, with neutral salines and diuretics, keeping up the action of the kidneys with mercurials occasionally; by which the whole of the water was absorbed. The appetite returned, and she became convalescent after a few weeks. From exposure to cold and wet, she was attacked with acute inflammation of the liver, and in the onset refused to be bled. Being already greatly debilitated, her disease very soon terminated fatally.

I was called to a young person, æt. 22, who appeared to be dying from hydrothorax and excessive anasarca of the lower extremities. Upon inquiry, I found she had been subject to rheumatic pain in her limbs. The lips were purple, the countenance bloated, and breathing very difficult; the pulse very irregular. She had not been able to lie down for a fortnight, as I was informed. I blistered her legs, brought the bowels into brisk action, excited the kidneys, as in the former cases; and by removing the fever from the system the debility left her, and she has been now for two years quite well, without any return.

EXTRACTS
FROM A
JOURNAL OF NATURAL HISTORY;

Kept during a Voyage from England to New South Wales, and on the return to England, by way of Batavia, Pedir Coast, Singapore, &c.

By George Bennett, Esq.

On the 20th of February, in latitude 19 deg. 21 min. S., and longitude 1 deg.

47 min. W., I had no success with the towing-net until about 9 P.M.; when I found in it a solitary specimen of a molluscous animal, resembling *Biphora*, beautifully transparent, almost octangular, with prettily-marked streaks at the divisions of each angle. It was of a firm nature, and could be handled without sustaining any injury.

At 10 P.M. I found a solitary specimen of *Salpa*, perfectly vitreous; which, on my placing it in a tumbler of water in my cabin (which was dark at the time), after removing it from the towing-net, it gave out, for a short time a very beautiful phosphoric light; which proved to me, by the wide diffusion of the luminosity, how capable the animal was of extending its light to a wide distance. The luminosity subsided as rapidly as it had been given out; on regarding the animal at the time, phosphoric matter could be seen exuding from every portion of the transparent body of the animal, which gradually diminished until the whole of the animal was concealed in the surrounding darkness. No luminosity was voluntarily emitted by the animal after the first effort, and even that I attribute more to the violence with which I probably plunged the animal in the water than to any voluntary power; for it never renewed the luminous powers except when disturbed by the finger, when it would display a faint luminosity of very brief duration, and dying soon after, all the phosphorescence disappeared.

February 21st, latitude 18 deg. 13 min. S., and longitude 2 deg. 43 min. W. In the evening a dolphin (*Coryphœna*, Cuvier) was caught, nearly two feet in length; the dorsal and other fins were of a fine purple colour; body silvery on the sides and abdomen, giving out a variety of tints during its expiring moments; the back and upper portion of the sides of a bluish colour, with yellowish spots. This fish being commonly known by the name of the "dolphin," is much confused with one of the *Cetacea* tribe,—the *Delphinus delphis*, or dolphin of the ancients; a species of the porpoise, which very much differs from the beautifully tinted *Coryphœna*. It was the *Delphinus delphis* that (according to Pliny) had an affection for man, and was fond of music; and he relates a story of one which carried a boy daily, for many years, across the arm of the sea from Baia to Puteoli, to school. The dolphin and porpoise, when seen sporting in the water, is supposed to indicate a storm; but facts do not, in too many instances, accord with the assertion, to render it worthy of credit. On inspecting the stomach, I found it to contain only a few specimens of very small flying-fish, about two inches in length; the heart pulsated, without being artificially excited, for upwards of half an hour after its removal from the fish, which was done very soon after it had been taken from the water.

My only success with the towing-net was at 9 P.M. when I captured only a solitary but very fine and perfect specimen of *Alima hyalina*.

February 27th, thermometer from 76 deg. to 79 deg.; in latitude 14 deg. 24 min. S., longitude 8 deg. 5 min. W. At 8 P.M. I captured, in my towing-net, two small specimens of flying-fish; one measuring two inches, and the other two inches and a half in length.

There was also in the net several specimens of *Hyalæa dentata*, and a small fish resembling the gar pike.

About 10 P.M., on hauling in the net, I remarked a brilliant phosphoric light appearing through the meshes, from which I immediately supposed I had captured some *Pyrosoma;* but I was not a little surprised at finding the luminosity to proceed from a small shark, which was alive and alone a prisoner in the net. On placing it in the dark, when in the water, it would re-assume the beautiful phosphorescent light. I kept it in water, and it swam about for some time, but on the following morning it was found dead. On examining it on the day subsequent to its capture, the body was found to be entirely black, with the bases of the fins also of that colour, and the upper part white and transparent; it measured seven inches in length; eyes sea-green. Although the abdomen was of quite a black colour, it alone gave out a phosphoric light in the dark. I preserved it in spirits, and on taking it out again for another examination, it left, on being handled, a quantity of black colouring matter, resembling the pigmentum nigrum, about the fingers.

On the 1st of March, thermometer 77 to 80, in latitude 12 deg. 15 min. south, and longitude 10 deg. 15 min. west, at 8 P.M., the towing net captured several fine specimens of *Hyalæa dentata*, and two species of the *Medusa* genus; one

very prettily spotted with dark-red spots.

On the 2d, thermometer 77 to 81, in latitude 10 deg. 53 min. south, longitude 11 deg. 20 min. west, after dark, there was occasionally seen an extensive phosphoric light in the water, visible first at one place, then at another; it evidently proceeded from a large fish swimming about. It is seldom, however, that I had before observed luminous properties made visible in the water by these fish, many of which evidently seem endowed with luminous powers, as in the instance of the small shark before caught in the towing net; but that it is not invariably the case is evident, from having often before seen fish of different kinds swimming about, which did not give out any phosphoric light after dark. Many would say that the luminosity may have proceeded, not from the fish, but from its passing through the luminous water. Although I am perfectly aware that such an occurrence often takes place, yet in this instance there was no luminous track left by the fish in its progress, but only when it came on the surface at certain periods; and on any heavy substance falling in the water this evening, there was no phosphoric light given out by the collision; nor was there any light produced by the progress of the ship through the water, in her wake, or by the breaking of the waves; so that the luminosity must have alone, in this instance, been resident in the fish.

March 3d, in latitude 9 deg. 13 min. south, longitude 12 deg. 40 min. west, at 8 P.M., I captured by the towing net two specimens of *Exocetus;* one measuring two and a half, and the other three inches in length; together with a broad fish, two and a half inches in length, of a greenish blue over the back; abdomen and sides silvery.

There were also several large *Medusæ* (entangling many crustaceous animals), luminous, and of a pinkish or rose colour.

At 9 P.M. the net was drawn up nearly half-full of the very luminous mollusca, and the phosphoric matter discharged from them covered the deck, hands, and every thing with which it came in contact. There were occasional very luminous flashes seen on looking over the sides of the vessel, which there can be no doubt proceeded from these animals. They are of the *Acalepha* class, and probably the *Pelagia* genus of Cuvier, *Dianea* of Lamarck; they were captured in the net of various sizes, some of them having some crustacea entangled in their tentaculæ, and which probably serves them with food. The orbicular body was of a very delicate rose colour, and the arms were speckled with minute dots of a reddish-brown colour; they emitted a brilliant phosphoric light; and either when touched, or laid on the deck in the dark, bedewed every thing with a quantity of phosphorescent matter.

March 4th, thermometer 80 to 83, after dark (being in latitude 8 deg. 50 min. south, longitude 14 deg. 56 min. west), flashes of phosphoric light were seen close to the ship. A pale light was at first given out, which diffused itself for some distance around, and as gradually subsided; this by aid of the towing net was produced; it was found by mollusca of the *Medusa* genus, of a delicate rose colour, similar to those captured last night, whose phosphorescence, emitted both by pressure or disturbance of any kind, was very extensive, and while the animal survived was often voluntarily emitted, when it was seen to be diffused, as in the *Pyrosoma*, *Salpa*, &c. over the whole of the body of the animal, varying in colour from light blue to green, and the usual pallid light of phosphorus.

March 5th; latitude 7 deg. south, longitude 15 deg. 37 min. west.—This evening the towing net only captured two specimens of *Smerdis armata.* There was none of the phosphoric light emitted from the ocean, as on the two preceding nights, and consequently no luminous animals were captured.

March 6th; latitude 5 deg. 46 min. south, longitude 16 deg. 45 min. west.—At 5 P.M. I captured a small but excellent specimen of what I suppose a species of the *Physsophora* genus of Peron, class *Acalepha.* The bladder was perfectly transparent and colourless; the lobular and other appendages were of a reddish purple colour.

There was also a specimen of *Janthina*, without the soft parts. The shell differed from the one before caught, in being partially white above, and the other parts being of the usual violet colour.

At 8 P.M. a large quantity of *Smerdis*

armata, *Phyllosoma commune*, a small specimen of *Exocetus*, and some luminous *Salpæ*, were captured.

At 9 P.M. the net procured me large quantities of *Smerdis communis* and *armata*, together with several small specimens of *Phyllosoma commune* and *clavicorne* mingled with them. The masses of these crustacea in the net, and their beautiful transparent crystalline appearance, certainly looked, as was remarked at the time, "as if they had been insects suddenly changed into crystals."

The range of the various *mollusca* and *crustacea* animals is certainly curious; and they seem to travel in large groups, judging from the immense quantity caught at one period in the net, and perhaps not even a solitary specimen on the evening following. The luminous *Medusæ* have passed, and now large quantities of the *Smerdis* are captured.

March 7th; latitude 4 deg. 43 min. south; longitude 17 deg. 37 min. west. —I did not capture a single specimen with the net during the day; but at 8 P.M. I procured some small specimens of *Exocetus;* some pink *Medusæ*, which occasioned some luminous appearance of the ocean after dark; and also an excellent specimen of an *Argonauta*, which seems to be the *A. tuberculosa* of Lamarck. On placing it in sea water it expanded its tentaculæ, but did not attach itself to the glass, or move about. I found the animal dead early on the following morning, in the glass of sea water in which I had placed it the night previous; and on moving the shell the soft parts fell out. After the animal was out of the shell, a cluster of ova was seen attached to the involuted part of the shell, somewhat similar, but in the recent state more beautifully shewn, than in the engraving of apparently a similar specimen by Sir E. Home, in the Appendix to Tuckey's Narrative of the Congo Expedition. On placing the shell in spirits, the cluster of ova floated out like a diminutive plant, of a pure white colour, presenting a very elegant appearance. After being preserved a day in spirit, much of its beautiful appearance was lost. The body of the animal was of a dark reddish colour (which colour was also given to the upper part of the shell, either naturally, or imparted to it by the animal, the remainder being of a dirty white), with minute purplish dots, and the arms were also speckled underneath of a similar colour; the suckers were white; the diameter of the shell was half an inch.

These cephalopodous animals are not, and I consider correctly, regarded as the true inhabitant of the shell, but merely a parasitical inhabitant; and the animal not having the power of either producing or reproducing the shell, must be sufficient to decide that the one usually found is not the original inhabitant of the shell.

The animal is an *Ocythoë*, which differs "generally from the polypus in having shorter arms, with pedunculated instead of simple suckers; the superior arms too are dilated into or furnished with, a wing-like process on their interior extremities." It is mentioned in the Appendix to the Narrative of the unfortunate Congo Expedition, under Captain Tuckey, that Mr. Cranch captured several specimens of a new species of *Ocythoë*, which were swimming in a small *argonauta*, on the surface of the sea. "On the 13th of June," it is stated, "he placed two living specimens in a vessel of sea water. The animals very soon protruded their arms, and swam on and below the surface, having all the actions of the common polypus of our seas. By means of their suckers they adhered firmly to any substance with which they came in contact; and when sticking to the sides of the basin, the shell might easily be withdrawn from the animals. They had the power of completely withdrawing within the shell, and of leaving it entirely. One individual quitted its shell, and lived several hours, swimming about, and shewing no inclination to return into it; and others left the shells as he was taking them up in the net. They changed colour, like other animals of the class *Cephalopoda;* when at rest, the colour was pale flesh colour, more or less speckled with purplish; the under parts of the arms were bluish gray; the suckers whitish."

On the 8th of March, latitude 3 deg. 10 min. south, longitude 18 deg. 30 min. west, the success with the towing net in the evening, was only a solitary specimen of *Phyllosoma commune.*

March 9th; latitude 1 deg. 37 min. south, longitude 19 deg. 40 min. west.

—At 8 P.M. I captured a number of the *Phyllosoma commune*, *clavicorne*, *Hyalæa tridentata*, and several small luminous *Salpæ*, diffusing over their bodies, when placed in a glass of sea water, several phosphoric dots.

There was also one of the fragile shells of *Cleophora*, which was unfortunately broken. The animal contained in this shell seemed luminous; but as there were also a number of luminous *Salpæ* in the net at the same time, the phosphoric matter might have proceeded from them; therefore I cannot decidedly say that the animals of this beautiful and fragile shell are phosphoric.

At 9 P.M. a number of luminous *Salpæ* were taken, and a very fine specimen of the gelatinous animal allied to *Leptocephalus*, and measuring 6§ inches in length. This specimen, when first taken, was slightly inflated, which has both remained and increased since it has been placed in spirits. This confirmed what I had before conjectured to take place, from a specimen captured some time ago about the coast of Sumatra —that the animal possesses the voluntary power of inflating its body.

There were luminous scintillations, as well as occasionally flashes, about the ship during the night, proceeding from luminous *Salpæ*, and from that mollusca of the *Botryllaria* order, the *Pyrosoma Atlanticum*, one of which was captured during the night.

ON VARIOLA AND VARICELLA.

By John Murray, M.D.

Cape of Good Hope.

[Communicated by Sir James M'Grigor, Bart.]

In tracing the history of the diseases variola and varicella, as they have appeared in this colony, and with reference to my former report on this subject*, I find that variola has been known to appear here at very long intervals, when its origin could always be distinctly traced to imported contagion; while varicella exists throughout the colony, and prevails more or less every year, without ever having been known to give rise to variola; which proves, in my opinion, that they are specifically different diseases, both in their nature and origin.

From the records in the Colonial Office I find that variola was first introduced into this colony in 1713, by a ship from India; and that it made its first appearance in the houses of some of the inhabitants, whose cupidity had led them to purchase clothes and other goods, the property of persons who had died of the disease on board the said vessel.

The second time it occurred was in 1755, as appears by a proclamation of the Governor-in-Council, dated 21st June of that year; being introduced by a ship on her return voyage from Ceylon, and in a similar manner as in 1713, in consequence of persons purchasing the wearing apparel of those who had died of the disease during the voyage.

It is stated that the mortality on both these occasions was very great, and that the disease spread rapidly and extensively, notwithstanding the precautions taken by government, and enforced by heavy fines on any party who should deviate from the rules laid down for checking its progress; and it was not till the 11th March, 1756, that we find a proclamation ordering a general fast and thanksgiving for the cessation of small-pox in town and country.

In 1767 it again broke out in Cape Town, and, as stated in a proclamation of the Governor-in-Council, dated 5th May, it first appeared in the houses of three Europeans and a woman of colour, where the clothes of some passengers from on board a Danish vessel (the Crown Prince of Denmark), homeward bound from Ceylon, had been sent to be washed. The disease had raged on board that vessel during the voyage, and several individuals had died of it; but this information was not publicly disclosed, nor was the disease discovered to have been communicated until some days after the vessel had sailed. The same precautions were taken as in the former instances, but did not prevent the disease from spreading widely amongst the colonists.

The records of the council state that it was the unanimous opinion of the medical men, both civil and military, that the small-pox did not proceed from any indigenous or epidemic cause at this period, but from imported infection, as above stated.

The disease did not again appear in

* Vide Med. Gaz. vol. xiii. p. 438.

the colony till March 1812, although in the interim it prevailed on board different vessels in Table Bay, which were kept under strict quarantine. At this period it was introduced by a slave ship from Mozumbique, which was condemned here, and the slaves landed with the contagion of small-pox existing amongst them; and I must mention a very monitory circumstance gathered from our medical records relative to this event.

The slaves on board this vessel being very unhealthy, and the commander having reported the existence of small-pox amongst them, after he had been some weeks in the Bay, a committee of medical gentlemen was ordered (on the 26th February) to examine into the nature of their sickness, and to report whether they really had small-pox amongst them or not, and whether they could be landed with safety to the community; upon which the committee reported, that "twenty individuals were found labouring under general disease of different characters, whilst four others were afflicted with the chicken pock; but in no instance does there appear to be a foundation for suspecting the existence of small-pox therein;" and therefore they recommended their debarkation.

It would be inferred from this report, without further information being given upon the subject, that the small-pox, which was communicated from this vessel, proceeded from the contagion of chicken pock; but the fact is, that the committee most unfortunately mistook the disease, and the four cases reported by it to be chicken pock were found to be cases of regular small-pox after they were landed, and of so severe a nature that two of the four died of the disease.

It appears by a statement made by the commander of the vessel, on the 26th February, the day subsequent to the examination of the committee, that small-pox had prevailed amongst the slaves on board during the voyage from Mozumbique, and also after her arrival in Table Bay, and that many deaths had occurred from it on board; which information, however, he concealed in the first instance, and did not fully disclose till after another prize slave vessel had been allowed to go away on account of having bad small-pox on board, and after the report of the committee; consequently it was suspected that his statement was fictitious, and made only to deceive the government, and therefore the slaves were landed next day (28th February) without further medical inquiry being instituted; but in six days afterwards the melancholy truth was ascertained that small-pox had been introduced into the colony by them; and a proclamation was issued ordering the removal to Paarden Island of all persons supposed to be infected, and of all who had been in contact with them, into quarantine.

Between the time of the disease breaking out at this epoch, and the month of July following, when it finally subsided in the colony, 240 persons in Cape Town alone became attacked with it, nearly one-half of whom died.

The good effects of vaccination were perhaps never more conspicuously shewn than at this place during this period; for, although it was only steadily introduced eleven months previously, considering the way in which the slaves, Malays, and free blacks, which form the larger proportion of the population live together, generally from fifteen to twenty individuals in one small house, without proper ventilation, or much regard to cleanliness; and that the greater number of them had not been vaccinated till the alarm was spread of the appearance of small-pox, it is rather to be wondered at that the disease was got under so easily.

It is stated in the weekly reports made from the fiscal's office of the progress of the disease, and the result of the cases, "that vaccination was found a perfect protection against variolous contagion at this time." Very few cases occurred among the higher or middle classes, and not a single attested instance where the party had been previously vaccinated.

Among the black and coloured population this could not be so easily ascertained; but, as far as could be elicited, none who were attacked had undergone vaccination.

I would likewise notice, that I find it mentioned in the report of the 10th July, relative to two cases of elderly men, who were the last that caught the infection, "that neither of them were ever vaccinated, having been led away with the idea that they had had the natural small-pox at an early period of life;" and in the report of the following week, under date 17th July, it is stated "that

one of these had died, and that the other, who was conveyed to the small-pox hospital as having every appearance of the small-pox, was afterwards found not to be afflicted with that disease but a sort of chicken pox," which was probably the modification of small-pox now denominated varioloid disease.

Since 1812 there has been no small-pox in the colony.

In regard to varicella, I have to mention that it was in some degree epidemic this year; and in one family lately arrived from India, where it broke out, and which I attended, the youngest child, a boy of seven months old, who had neither been vaccinated nor had small-pox, became affected with it. The case was therefore observed with curiosity and interest by Dr. Smith and myself; and the progress of the symptoms, the degree of constitutional disturbance, and the appearance and course of the eruption, were found not at all to differ from those of the elder sister and other children affected, who had previously undergone the process of vaccination; in all of them the disease corresponded exactly with the description I gave of it last year in my own children.

From the way in which this disease often breaks out here I am much inclined to believe that it occasionally has a spontaneous origin, and that its cause is generated, *de novo*, from certain hitherto unknown circumstances, as it arises at times and places when it is quite impossible to trace it to its specific contagion.

In my first annual report from this place, in 1822, I noticed its sudden and simultaneous appearance and disappearance at Cape Town and on the frontiers, both amongst the military and civilians; and, although there was every reason to consider it contagious, the matter of the pocks seemed not to be infectious, as two of our medical officers inoculated several individuals with it, taken at an early stage, without communicating the disease; but the experiments could not be reckoned decisive, as it was not shown that the persons had not previously had it; and, besides, these negative experiments are not sufficient proofs of the non-existence of varicellous virus. The disease has not been confined to children, as we have had many instances of its attacking persons after the age of puberty, and in these it has been generally very severe, yet never so much altered in character as to be in danger of being mistaken for small-pox or the varioloid disease by competent observers.

It has never been known here to give rise to variola or varioloid disease, nor to have been the result of variolous contagion; and I have not known any instance in which it affected the same person twice.

If any thing was before wanting to prove a decided difference between variola and varicella, the history of their mode of appearance here must, I think, go far to complete the evidence on this point, and to establish that they are as distinct diseases as variola and rubeola.

Cape of Good Hope,
March 1834.

REMARKABLE CASE OF INTROSUSCEPTION OF THE COLON INTO THE RECTUM.

To the Editor of the Medical Gazette.

Sir,

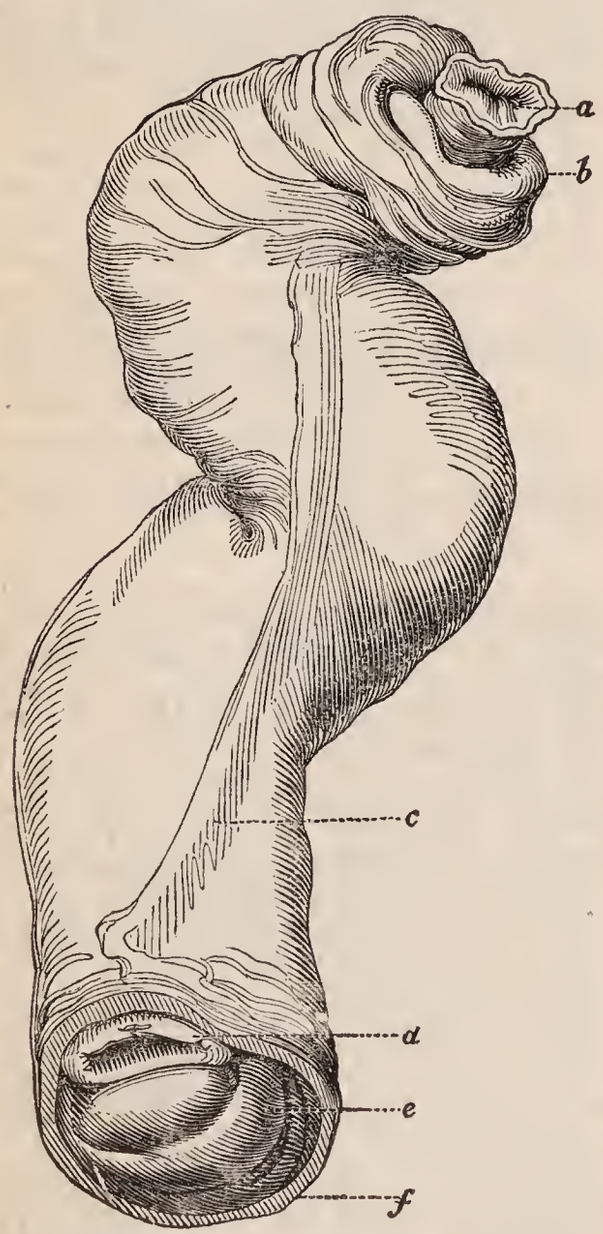
I beg leave to forward to you the particulars of an interesting and uncommon case of introsusception of the colon into the rectum, where the whole of that gut, with the cœcum, and about four or five inches of ileum, were found, and which, when removed from the body, had the appearance represented in the annexed drawing. The preparation is in the museum of my friend, Mr. Swan, of Tavistock-Square (to whom I am indebted for the sketch). I took it to him before the state of the parts was disturbed; and it was with difficulty (without tearing the intestine), that the colon could be drawn out of the rectum. The symptoms in this case much resembled those of strangulated hernia, faintness, with almost a loss of consciousness, depressed pulse, and constant straining, with vomiting, while nothing passed but a little bloody mucus.

The subject of the attack was a child, ten months old; and regarding it at first as a disordered state of the bowels, I administered an aperient, and after the lapse of some hours, an enema, with

a little simple cordial medicine; but these means failing to produce any mitigation of the symptoms, I inserted my finger into the rectum, and discovered a portion of the gut, about to protrude externally, round which I could easily pass my finger. This too surely indicated the nature of the case, to which no relief could be given; and the child survived only thirty hours after my being first called to it.

I am, sir,
Your obedient servant,
MATTHIAS ROWE,
Surgeon.

24, Woburn-Place, Oct. 13, 1834.



a, Ileum.
b, Colon turning in.
c, Meso-rectum.
d, Termination of the ileum.
e, Cæcum.
f, Cut margin of the rectum.

EXPERIMENTS RELATIVE TO THE SENSE OF TASTE.

To the Editor of the Medical Gazette.

SIR,

IF the following account possesses any interest in your estimation, its insertion in an early number of the Gazette will oblige, sir,

Your obedient servant,
DANIEL NOBLE.

Manchester, Oct. 15, 1834.

Mrs. Williams, about 50 years of age, 22, Pot-Street, Ancoats, Manchester, states, that some years ago she had two or three leeches applied to the left temple, near the outer canthus of the left eye, when, in a day or two afterwards, violent neuralgic pains ensued upon the left half of the face; these gradually subsided, and left almost complete amaurosis, and paralysis of sensation on the affected side of the head and face, as supplied by the branches of the fifth nerve; the function of voluntary motion remaining perfect as before. In this state she continues at the present time.

There is a peculiarity in this case to which I would particularly allude, in the fact of the sense of taste being unimpaired in the left half of the tongue, whilst its common sensibility is all but destroyed. To impressions of common tact, of pain, of the rough or the smooth, of heat or of cold, she is all but insensible; whilst to impressions of the bitter or the sweet, or any other modification of the sense of taste, she is as acutely alive on the affected as on the sound half of the tongue. For example, if she be blindfolded, and directed to protrude the tongue, and the blade of a knife be placed upon the lingual surface transversely, she feels it only on the sound side, or at least her perception on the affected side is of the most obscure description, being, as she words it, a "numb, dead feel." A portion of the mucous membrane on the affected side was lacerated with the point of a lancet, and she felt not the slightest pain—all, in her own words, being "numb and dead." The blade of a knife was introduced into hot water, and

then placed transversely upon the tongue: she had only the perception of heat on the sound side. Small portions of common salt were sprinkled upon the affected side, and similar quantities of sugar on the other: she was insensible to the fall of the particles on the affected side. In a few seconds, however, when the sapid particles had partially dissolved, she was as acutely alive to the saline taste on the affected half as to the saccharine on the other; and the sensation of taste was excited at the same distance of time from the first contact of the sapid ingredient on both sides of the tongue. These experiments were modified in a variety of ways, the woman always being blindfolded, and in ignorance of the exact procedure, or its intention; and in whatever way the trial was varied, it was obvious that whilst the common sensation of one half of the tongue was in effect annihilated, the sense of taste was unimpaired.

Does not the above case decide that taste is something more than a modification of common sensation? And if so, must it not, as in the case of smell, be dependent upon a specific nervous supply? And as a variety of facts shew clearly that the "true gustatory nerve" conveys both common and specific sensibility to the tongue, must it not be a compound nerve?

What is the function of the nerve from Meckel's ganglion, called *chorda tympani*, which joins the branch that goes to the tongue from the Gasserian ganglion? — of which nerve that distinguished neurologist, Mr. Swan, observes, "It is supposed that the chord of the tympanum does not unite with the gustatory, but passes in mere contact with this; but if a preparation that has been kept in spirits be carefully examined with a magnifying glass, and at the same time an attempt be made to disunite these nerves, it will be found that the filaments of both are intermixed, and cannot be separated without violence."

And in conclusion,—What is the function of the branches from Meckel's ganglion distributed to the soft palate?

ILLUSTRATIONS

OF THE

MALADMINISTRATION OF CERTAIN PROVINCIAL HOSPITALS;

More especially in Liverpool.

By James Collins, M.D.

I was obliged, from want of room, to conclude my last communication rather abruptly, with the extract from Mr. Moss's speech at the meeting of the Trustees of the Liverpool Infirmary; and I wish now to resume the subject, not from any personal or vindictive feelings, for I have none, nor to gratify any disappointed ambition or sinister object, as has been insinuated by Dr. James Johnson, in the last number of his Medico-Chirurgical Review, in allusion to these sketches, though at the same time he seems to adopt their sentiments. But I recur to the subject in order to put upon record some illustrations of the management of our provincial hospitals, which are not altogether without interest, and even utility, as they may enable persons unacquainted with such details to form more correct notions of the propriety or impropriety of receiving, without some other qualification than a certain number of beds, certificates of attendance on the institutions in question, or of placing them, in this respect, on terms of equality with those in London or other capitals. We are on the eve of some great change in our medical legislation, and care ought to be taken, by those who have the power, to render it as perfect and useful as possible, and to prevent the abuses which I have already detailed, and shall hereafter detail, from recurring: for it is obvious to common sense, that hospitals, even though of the same size, and having an equal number of beds, cannot afford the same advantages or instructions, (supposing the medical men to be of equal zeal, talents, and acquirements,) if the patients in the one are principally old chronic cases that are seen only once or twice a week, without any regular or detailed account of them being kept, whilst those in the other are principally acute, well selected, and prescribed for daily, with regular records of their commencement and progress entered on the books. The certificates of such hospitals ought not to be received as equivalent; to do

so is to act not in accordance with sense or the interest of the profession. The certificates of an hospital not containing fifty beds, if well managed, would and ought to be preferable to those of an hospital containing three hundred, conducted in the way alluded to; and to shew that these are not merely hypothetical or speculative cases, I must recur to the proceedings of the Liverpool Infirmary and Asylum.

I have already stated, from official documents, some very curious details in this respect, almost incredible, if not so well authenticated; for who could suppose, that in the Lunatic Asylum of such an enlightened town as this is, even so late as 1825, several patients should have been confined there for twenty or twenty-five years without its being known who they were, whence they came, who sent them, who admitted them, or any other particular about them?—that other patients in the same establishment were not seen by the medical men for five or six weeks?—that others were confined there as insane who were let out as sane by the staff-surgeon appointed by government to see them—illustrating how doctors differ? It was a curious and a novel sight to see and hear their disputes on this head; some vociferating that they were mad, while others maintained the contrary. Who could suppose that keepers would be allowed to administer medicine to the patients according to their whim or caprice? that a person confined as insane should be allowed occasionally to act as surgeon—to extract a bone from the toe of a boy, and a cupful of matter from the back of another? or that a woman should be allowed to perform now and again the office of physician?—(See the evidence of these and other similar misdeeds, in the Liverpool Commercial Chronicle of January, 1826.)

Though the evidence was suppressed for a long time, and a report directly contrary to it made to Mr. Secretary Peel, it was afterwards accidentally published, to the astonishment of the town, who little imagined that any set of gentlemen could be found to state, as they did, that the real grounds of complaint were confined to a few unnecessary instances of severity, and that the general management of the establishment was good. Let any man read the evidence, and contrast it with their report, or resolutions, of the 31st of March, 1825, and then ask himself if human nature could be so disingenuous. Well might the mayor (Mr. Hollingshead) exclaim that they struck him with perfect astonishment, and that he had to accuse himself of having acted with too much courtesy and leniency. Such abuses can no longer take place: the government has since framed a new code of laws for the management of the institution in question, and I am quite satisfied, from what I know and have seen myself, that they ought to do the same for our hospitals, without interfering much with the local rights of the subscribers. A few simple general rules, included in the bill Mr. Warburton intends to bring in, or in the regulations of the Colleges of Surgeons, would suffice; rendering it imperative that the patients of all hospitals should be seen, if not every day, at least three or four times a week, by the medical men, or substitutes for them; and that no certificates should be received from any where this was not the case. This simple regulation would do more good to humanity and the progress of medicine, than all the medical cases that have been published for the last fifty years. No person who has not had local experience in these matters, can form an adequate notion of the benefits that would thence accrue to the public and the patients; and that it is not altogether so unnecessary as to many it may appear, I shall prove from the transactions of the Liverpool Infirmary. What has happened once may happen again, if we may judge of the future by the past.

At a meeting of the subscribers, convened in 1824, to take into consideration the propriety of appointing additional medical officers to the Infirmary, Mr. Freme (a wealthy and respectable merchant of this town, since dead) stated, in moving a resolution to that effect, "that the medical men did not perform their duties as the interest of that institution required; that the patients suffered much from the manner and mode of their attendance, some being there a week, others much longer, without receiving from them assistance or advice." Mr. James Cropper, the well-known Quaker of this town, corroborated these statements, and, among other things, said, "that, in one of his visits to the Infirmary, he saw a man in the accident

ward in a most dangerous state; and that, on asking the apothecary when this man saw his surgeon, the answer was, 'Not yet:' he (Mr. Cropper) desired him to be attended to, and on his next visit he inquired again after this wretched patient, but, to his surprise, he was told he died the day after he (Mr. C.) had seen him, without ever having seen the surgeon under whose care he was nominally placed; and what renders this the more criminal, is the fact that the surgeon, instead of expressing regret for not having seen him when alive, regretted only that he had not been informed when he died." Mr. Ruston, the commissioner and barrister, stated, "that in or about the previous December, a man applied for admission who required immediate relief, and that when received into the Infirmary he remained there four days before he saw his surgeon; and that when at length he came, instead of lending his assistance to set the fractured limb, he ordered his pupil to do it the next day; and that this man remained seven weeks in the Infirmary, and was at length removed by his friends, his ankle remaining precisely in the same state as at the time of his admission."

These and several other facts were stated, and not denied, and evidence offered to corroborate them, but in vain. The proposition of Mr. Freme was rejected, denounced as radical, amidst the indignant hisses of the majority, and a vote of thanks which was proposed by Mr. W. Currie to the medical men for their services, was carried in triumph and applause.—(See the Liverpool Mer- April 1824.)

To these statements I may add the fact that the medical men themselves admitted that they had done their duty as their predecessors had done; that the practice was to see the patients on Saturday, or once a week, and those whose cases required particular attention on Tuesday. "The practice was (they say) to see all the patients on Saturdays; and Tuesdays, those only whose cases were supposed to require particular attention. The law, however, says that they shall be seen on both days: when the revision, at Mr. Cropper's suggestion, was proposed, in 1822, this circumstance (*that is, that the patients ought to be seen twice a week*) was pointed out to us; and since then the law has, almost without exception, been attended to." Thus we see, by their own shewing, that they were ignorant that the laws of the institution required them to see their patients twice a week; as if humanity and the first principles of justice did not render it imperative on them to do so. One would suppose that it ought not to have required specific injunctions, or laws, to fulfil so simple and obvious a duty; yet so it was. Even their assertion that since 1822 the patients had been attended to and seen twice a week, is not correct; for all the facts mentioned in the foregoing statements, relative to the Infirmary and Lunatic Asylum, took place since that period: yet, year after year, votes of thanks were rendered to them, their merits and services to the charities vaunted, and their names blazoned, as ornaments to humanity, in the newspapers; and what was most extraordinary is, that then, as well as now, most of our public charities were models of preaching, praying, and psalm singing.

The whole history of these proceedings presents a most extraordinary picture of hospital neglect and defective administration, and attests the necessity of some legislative measure to guard against their recurrence: it is not enough to leave the management to the subscribers; the previous facts shew how unfit they are for this duty, and we all know here how often party spirit, religious feuds, bigotry, and ignorance, combined with a total indifference as to details, disqualify them for such a task. They subscribe from one motive or another; some from vanity or ostentation, others to have a right of providing for their servants or dependants in the hospital when sick, and a few from a higher and more benevolent impulse. They take no interest in the application of the machinery, and only muster on some field-day, when a friend is to be put in or an enemy ousted, or when some cause of excitement prevails, such as an election, and then, provided they come from the church or corporation party, they are sure of being carried triumphantly through. The whole system is one of *feeding* and *backing*, without any other principles or motives of action.

Now, then, the question comes—ought the certificates of such hospitals to be received without some other condition, or restriction, besides a certain number of beds; ought not some proof to be required of their ge-

neral management, of the number of times that the patients are seen in the week by their medical advisers, and of regular and daily records of the cases being kept? These things ought to be looked to by those whose duty it is to do so. They may appear trifling and unimportant, but they are of the greatest consequence to the sick and to the pupils: even to this very day, the laws and regulations of our Infirmary require the patients to be seen only twice a week, though, I believe, some see them oftener; but such things ought not to be left, as works of supererogation, to the caprice or taste of the medical men. The patients are seen every day in the large hospitals on the Continent, in Ireland and Scotland, and, I believe, in London; and why should it not be so in the provinces in England—particularly when it is now contemplated to place them, in respect to qualifications for degrees in surgery, on terms of equality with the London hospitals, or those of other capitals, where the means of instruction are so infinitely superior to any thing in this respect that the provinces can afford?

I wish now to make one or two observations on the conduct of the Committee of the Liverpool Infirmary and Asylum, before I close this part of my subject, in the hope that they may serve as a lesson to others not to imitate their example. It is strange, that during the existence and perpetration of these abuses in our Infirmary and Lunatic Asylum already alluded to, that they always threw themselves into the breach to justify or conceal them, and never, as a body, raised their voices in reprobation of them, but, with the spirit and doggedness of thick-and-thin partisans, opposed, year after year, any change for the better in the constitution of these establishments; not from any gratuitous or wanton love of mischief, but because the attempts to reform them proceeded principally from those they deemed their political opponents, and the maxim was to put them down, no matter by what means or under what circumstances, although that Committee is usually composed of the principal merchants and parsons of the town: one could scarcely believe that they could or would lend themselves, in the cause of charity and humanity, to such petty and unbecoming passions; and yet, when they pleased, and had an object in view, no persons knew better how to arraign their medical men, and make the charity the pretext for doing so. Not long since, they affected wonderful zeal for the morals of our medical men, and summoned before them the physician of the Lunatic Asylum—not for any neglect or inattention to the patients there, or for any incapacity or unwillingness to do his duty to them; but because he was said not to have examined a private patient, who was labouring under some uterine irregularity, with all the delicacy and tact of the saints in the profession. The gentleman was honourably acquitted, and the necessity of the examination justified by some of the first practitioners of the day. At the bottom of all the manœuvres in this business were two medical men—one the supposed but faithless friend of the accused, the other his avowed enemy. Their principal tool was a parson on the Committee, whose duty and profession, one would suppose, ought to make him heal rather than open wounds, and cover with the mantle of charity the weaknesses of human nature, if they existed, rather than to exhibit them to the jaundiced eye of the public. They stepped out of their way, and beyond the duties of their office, to take cognizance of the private acts of an individual connected with their charities, and encouraged a system of espionage and talebearing as destructive of morals as disreputable to the independence of the profession; and all this was done by the Committee to gratify the private feelings and views of one or two of its members, though they never opened their eyes to the more glaring and obvious defects of their public establishments. They never, for example, sought to do away with the rule that requires the patients to be seen by the medical men but twice a week, and oblige them to see them every day, and keep regular registers of their cases; nor did they ever seek to do away with the rule that admits patients but once a week into the Infirmary, and thus fills its beds with old chronic cases, and excludes the great mass of the more important and acute ones. And again they never sought to diminish the number of gentlemen's servants that are received in preference to others, and that fill so large a number of beds. If they made these and other changes of equal importance, they would indeed be doing good, and multiplying,

at no increased expense and very little additional trouble, the utility of the Infirmary.

However, we are not altogether without changes in our medical usages here. Some years ago, a chaplain of the established religion was appointed, at a salary, to the Infirmary, as a panacea for all its defects, though the greater part of the inmates never trouble his ministry nor belong to his creed, being generally dissenters of one denomination or other. I wish he would use his spiritual influence with his brother clergymen, to effect some of the changes mentioned above: this would be doing something for the money of the subscribers, and fulfilling the avocations of his profession in extending the works of charity; and I believe, from his character, he is well inclined to do so.

We have also had some changes, within the last few months, in the qualifications of candidates for the office of physician or surgeon to the Infirmary: heretofore they may have practised, and did practise, pharmacy; but now they are not allowed to do so. Perhaps this is for the better; but the object of the alteration was to shut out, under the pretext of improvement, the great body of the practitioners here, who, almost to a man, are general practitioners. The surgeons of the Infirmary never suggested such an alteration until the other day; and, it is supposed, from no other motive but to enable one or two hangers-on of the corporation and church party, who are the next on the list for promotion, to walk over the ground when the next vacancies occur; and yet the only effect of this alteration will be, as it is, an understanding with some of the druggists to supply the medicine at prices previously arranged between them, leaving a fair and reasonable profit to both parties. Had they made a law that they should be what are termed "pure surgeons," then, indeed, they would shew some consistency; for what is the use of preventing them from making up their own medicines, if they be allowed to practise midwifery, as all our Infirmary surgeons do here? It is a mockery of legislation, and gross affectation, to allow them to practise midwifery and not pharmacy. To make them give up both, would indeed be of incalculable benefit to the patients and to the profession. The practice of midwifery, medicine, surgery, and pharmacy, is rather too much for one head, generally speaking, and particularly for the surgeons of large hospitals. Just conceive some serious accidents brought in, requiring the immediate personal attendance of the surgeon, and that he, instead of being able to come, and to afford the assistance which he promised when he took office, and which the sick require, sends back word that he does not know when he can come, being in attendance on a lady in *her accouchement*. This is no imaginary case; it is of frequent occurrence and of disastrous consequences; and ought to be prevented by the very simple means of allowing no hospital surgeon to practise midwifery; and this, not from any disrepute being implied in doing so, but because it is physically and morally incompatible with the regular and proper discharge of his hospital functions. There ought to be none but pure surgeons, as the phrase goes, attached to them. They exclude here physicians practising midwifery from these appointments—nay, from the very Dispensaries—and allow the surgeons to do so! as if what applied to one, in this respect, did not apply, with ten times more force, to the other. It is a curious fact that there is, and has been for many years, but one "pure surgeon" in this great town; all the rest practising medicine in all its various departments—physic, pharmacy, surgery, and midwifery; all keeping open shops or private surgeries; in a word, general practitioners. No change was ever contemplated in this system till the other day, when the practice of pharmacy was made a disqualification for the office of surgeon or physician to the Infirmary.

I have in this sketch pointed out some defects and abuses of our provincial hospitals, that seem to me well deserving of the notice, not only of the subscribers, but of the College of Surgeons, and forcibly to illustrate the necessity of some other condition being attached to their certificates besides a certain number of beds. In order to avoid the continuance or recurrence of some of these malpractices, the legislature ought to interfere, and take some part of their general management from the subscribers.

Liverpool, Oct. 10, 1834.

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ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

Lectures on the Ordinary Agents of Life, as applicable to Therapeutics and Hygiene; or the Uses of the Atmosphere, Habitations, Baths, &c. in the Treatment and Prevention of Disease. By ALEX. KILGOUR, M.D. 1 vol. 8vo. pp. 283.

WHY the author of this work should have chosen to bring it out in the shape of lectures, we cannot well conceive; especially as we presume the said lectures were never delivered, and of course now never will be. It was bad taste, to say the least of it; for, even supposing the materials of the volume had been delivered *ex cathedra*, they would still have required much pruning to make them a good reading commodity, which, we are sorry to say, in their present form, they are not. The style is colloquial; and but too often, when the author intends to be facetious, he is indelicate and coarse. For what class of hearers or readers he intended his lectures, it is not very easy to say for certain. In his lengthy and desultory preface, he informs us, in one place, that they are designed for the profession; but from the title of the performance, and the popular manner affected throughout, we should fancy he rather had the good of the public at large in view. And indeed this seems to "stand confessed" at p. xxii. of the said preface.

"Antyllus tells us," says our author, "that to relieve the sickness from a dose of hellebore, the patient should be entertained with some funny little story. Oftentimes a medical work is as sickening as a dose of hellebore, and the student has reason to pray that the author had introduced occasionally the *lepida fabella* for him, as well as recommending it for his patient. I have not always walked on the professional stilts; and if the non-professional person attempt to read my work, I hope he will not find that I have catered to the diseased fancy of hypochondriacs, or called up an awful array of rules for health, as if death was in every pot, and destruction in every mouthful of air."

So much for the design and general quality of the volume. The author seems satisfied that it has been much wanted; but let us see how he convinces himself of this.

"The importance of these agents (the non-naturals) is a piece of knowledge which the young practitioner only acquires, in general, by some sad experience and bitter disappointment. Whilst he is pondering on the case, weighing accurately in his mind the action of each medicine he is exhibiting, and watching with intense anxiety for its expected sanitory effect, the patient will quit this world with the medicine very likely in his bowels, but along with it some solid and substantial article that would require the digestive powers of the healthiest stomach. A hard bed is a hard thing to a healthy person, and more especially to a *fat female dowdy*, who measures all others' comforts by her own; and where rest might be life, death is hastened by following the advice of this feeling hearted soul, in moving the patient for the purpose of shaking up *his* bed. A free ventilation might soon put him on his legs, and it would for certain expel effluvia; but open windows let in the cool air, and cold air is better felt than contagious effluvia: so the windows being kept shut, and the bed-curtains drawn close, the patient has the happiness of dying in an atmosphere of his own creating, raised to a proper patrifying temperature by means of a blazing sea-coal fire. What can we think of the man who, in circumstances like these, calls for paper, pen, and ink, in order that he may *scrawl a receipt, in indifferent Latin, for worse medicine*, and knows not to order that which would relieve the patient without pain or expense?"

Why—"indifferent Latin," and "worse medicine"? What have these to do (even if they were so common as Dr. Kilgour seems to think), with an ignorance of the *non-naturals?* But this sort of gross exaggeration, which we frequently meet with in the volume, we beg leave to tell the author, however it might pass off flippantly in a lecture, is as unbecoming as it is unwarrantable, when deliberately set forth in print. Where can Dr. Kilgour have seen the "young practitioner" in such a state of stupid ignorance setting about the business of his profession? Where are such "young practitioners" licensed? It is surely not *south* of the Tweed; and if such be the worthies in whose behalf the Doctor has published his lectures, he would have done wisely in sparing himself the expense of forwarding any copies in this direction.

But we perceive that the author's

kind consideration extends to us as well as to the "young practitioners" of his own country.

"In England, the artiele of diet is held of some importanee; but even the aequaintanee with *this one* is not eomplete. The praetitioner knows that, in aeute disease, his patient should not have beef, nor beer, nor strong soups; but this is about all he does know on the subject. Low diet and perfeet starvation are with him almost synonymous terms; and what he, at the very utmost, understands by a change of diet, is merely a transition from beef to bread, and from soup to gruel. Of the effeets of the different kinds of food he knows nothing."

If this be the case, Dr. Kilgour's leetures ought to be quite a godsend. But sober truth obliges us to say that, English and ignoramuses as we are, we have in vain sought for anything new or original in the volume before us. If, however, our search has been unproductive in finding things merely new, it has not been so in respect to things surprising and singular. For example, who would expeet to find, in the lecture on clothing, such an animated expostulation as the following? Dr. Willich, it seems, in his observations on dress, quotes a Dr. Faust, an eminent German physician, who argues against the use of *breeches*, but denies the conclusiveness of the learned German's argumcnt. Dr. Kilgour, however, conjectures that Faust "perhaps lost his breeches, metaphorically speaking," and then bursts out into the following elegant protest:—

"Good heavens, give up our breeches! No, neither for Dr. Faust, nor the still greater Mephistopheles; neither for Faust, the disciple of the Devil; nor this Faust, the diseiple of Folly!"

On the subject of *stays*, concerning which we have had disquisitions and discourses *usque ad nauseam* from many a learned pundit of late, our author is as copious as any of his predecessors; and so much in earnest about it, that in the solitary lithograph which adorns his work, he copies from the Penny Magazine some illustrative figures, which that periodical copied from Soemmering.

The chapter on Exercise contains a good deal of amusing matter, but much precious time is wasted in telling us that "in leaping the shock is much greater than in walking, in proportion to the height which the body has been raised from the ground;" and that in riding, an invalid ought to prefer a she-ass to one of the other sex, "as, besides carrying the invalid, it will furnish him with her mild and easily-digested milk," &c. The account, however, of the *training process*, which closes this chapter, is interesting: the reader will not fail to notice, at the same time, the style of the description.

"The most flabby and shaking sot of a tap-room will be, in three or four weeks' training, made as *pretty* and powerful a man as can be seen *of his inches*. All this is achieved by pure air, by nourishing food, and by exercise. The trainer takes his man to an open, and, if possible, a hilly country; he *cleans out* his stomach and his bowels once or twice with an emetic, and a warm and resinous purgative; he takes him from bed every morning at six, and exercises him in walking, running, leaping, riding, or a part of all, for three or four hours at least; he then breakfasts him on a beef-steak, stale bread or biscuit, and a little tea or milk. Exercise is again had recourse to, either as before, or with the gloves, the balls, the dumb bells, or quoits. The dinner is beef-steaks, or joint of mutton, or lean chop, stale bread, and a little beer. Exercise is again followed for three or four hours in the open air, and then supper of steaks and stale bread. The bed is hard, and the length of sleep not above seven hours. He has no idleness of mind or body; he must be always occupied, and it is best to engage his mind with the exercises of his body. He eats but three meals a-day, and the solids must be nothing but the lean of fat beef, mutton, or venison. The legs of fowls are sometimes allowed for variety, but no veal nor pork. The meat must always be broiled and under-done. Stale bread is almost the only vegetable substance allowed; sometimes a little potatoe, but no *herbs*. Eggs are occasionally taken, but no cheese, nor butter, or fat of any kind. The quantity of solids allowed during the day will depend upon the stomach and constitution of the individual, but must always be rather *below his usual quantity*—seldom, in any case, above twenty-four ounces. No condiments are allowed, with the exception of salt, and that only in a very small quantity. Fluids are considered as injurious. No food is given in this form; and, for the purposes of alleviating thirst, and supplying the necessary waste of the fluids of the body, soft spring water is the best. No spirits are allowed, but occasionally a little porter after dinner or supper. The quantity of fluid, of any kind, taken during the twenty-four hours, must not exceed, in all, three English

pints. Exercise of that kind in which the trained person is to exhibit, must form a large part of his daily occupation."

We have said that parts of this work are coarse and indelicate: much of the last section on the secretions is grossly so; and we are at a loss to comprehend for whose benefit it was written, if not for that of certain non-professional debauchees of most depraved appetite: surely not for the medical profession, or even the youngest of practitioners. The author probably would excuse himself by referring us to the anecdote of Sterne and the lady (which, by the way, he mangles sadly in the telling—as he also does another relative to Mr. and Mrs. Shandy); but, beside that we cannot exactly concede to Dr. Kilgour the same privileges that we do to the inimitable Yorick, we question if there be, in the whole range of the works of the latter, any thing to equal the indecency of Dr. K.'s concluding lecture.

One word more. We would recommend the Doctor, when next he quotes the *Greek* writers, to do so less frequently in *Latin:* he might as well give us Ambrose Paré or Morgagni in Scotch. And when embellishing his text with poetical beauties, we would have him at least know to what author he is indebted, and what that author is speaking about. For example:

"The poet was not so far wrong when he said, *in satire*, of *a fashionable female*, that she would

"'Die *from* [of] a rose in aromatic pain;'" &c.

We thought every school boy knew that the poet who wrote this exquisite line (exquisite when taken in its proper sense and unmutilated), had neither "satire" nor "fashionable female" in his head when penning the passage to which it belongs. Would Dr. Kilgour have the kindness to look into Pope's Essay on Man, first epistle—and blush for his transgressions?

A Manual of Aphorisms in Chemistry; the Chemico-pharmaceutical Preparations and Decompositions of the London Pharmacopœia; and Toxicology, &c. By Robert Venables, A.M. M.B., Oxon.

The student will find this a very useful little work. It comprehends a great number of the most practical facts in chemistry, pharmacy, and toxicology; and will be particularly available for imprinting on the memory what has been already learned at lecture, or from class books. In some instances, indeed, the author is even in advance of the present state of class-book knowledge. We shall give an example, which will serve at the same time as a specimen of the style in which the manual is composed.

"127. The most important of the narcotic poisons are opium and hydrocyanic acid.

"128. Opium may be detected by testing, either for its morphia or its meconic acid.

"129. Morphia, if treated with nitric acid, becomes red; with permuriate of iron, it dissolves and forms a dirty indigo blue. It decomposes iodic acid, setting the iodine free, which may be detected by starch.

"130. Meconic acid forms, with sulphate of copper, an emerald green colour; and with the persalts of iron, a red. Upon these properties principally are founded the means for detecting opium.

"130. Sulpho-cyanic acid communicates also a red colour with the persalts of iron, and therefore might be confounded with meconic acid; but the precipitate, with nitro-muriate of gold, distinguishes it."

Dr. Venables is here, we believe, in advance of Christison, in noticing the properties of sulpho-cyanic acid in connexion with the meconic acid. It may here also be observed, that the aphoristic style has its defects as well as its advantages: *brevis esse laborat, obscurus fit.* The author might have added one little piece more of information, without much increasing the bulk of the last aphorism. He might have stated that sulpho-cyanic acid, or at least the sulpho-cyanuret of potass, is a constituent of human saliva,—which would at once impress on the student the importance of noticing this substance in juxta-position with opium.

A Compendium of Pharmacy, explanatory of the Chemical Decompositions of the Pharmacopœia Londinensis; illustrated by Diagrams. By Wm. Meade, M.R.C.S. &c.

There is a good deal of useful information comprised here in small compass. Students of pharmacy will find it a convenient hand-book, and we recommend it to them accordingly.

MEDICAL GAZETTE.

Saturday, Oct. 25, 1834.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

TREATMENT OF THE PROPENSITY TO SUICIDE.

OUR magistrates have lately, in several instances, adopted the practice of inflicting punishment on persons caught in the act of making away with their own lives. The design is exeellent and humane, and the result, we believe, in general has proved highly satisfactory. It often happens that a wretehed person, resolved on self-murder, only requires to be ehecked on the verge of the preeipice to be made sensible of the enormity of the crime he is about to commit. Others are helped to the same conviction when they have had one cooling plunge in the water in whieh they intended to perish, but with the ehance of safety still within their reaeh. Others, again, are brought to their senses by being put under a temporary restraint, and perhaps being favoured with a little leisure for refleetion while treading the wonder-working Mill. This was the remedy preseribed a few days ago, by a poliee magistrate, for a woman, who, in a fit of drunkenness and vexation, flung herself into the London Dock. A short residence at Brixton will, no doubt, do her mueh good.

Judging from what we know, and have heard, of persons interrupted in their purpose of suieide, it seems probable that, in the great majority of eases, there is only required some obstaele, however slight, to divert the attention of the suicidal desperado, and to break the eurrent of his thoughts. The story is currently told of the man who was about to preeipitate himself from the battlement of a bridge at midnight, but was startled into sanity by the sight of a robber's pistol levelled at his head. The spell was broken: he could see at once the awful nature of loss of life by one method, though, owing to his previously-brooding thoughts, he had lost all sense of the same bereavement by another.

Imitation is a fertile source of suicide. That man is an *imitative animal*, aceording to the dogma of the old philosopher, is here displayed in a serious light. The annals of every people and race on the face of the earth have something—some calamity of this kind—to quote in illustration. In the olden time, the ladies of Miletus, in a fit of melancholy for the absence of their husbands and lovers, resolved to hang themselves; and vied with each other in the alacrity with which they did the deed. In the time of the Ptolemies, a stoie philosopher pleaded so eloquently one day, to an Alexandrian audience, on the advantages of suieide, that he inspired his hearers with his prineiples, and a multitude of them voluntarily gave up their lives. The young women of Marseilles were, at one period, much in the habit of making away with themselves; but a law being passed, that the body of every female who committed suicide should be publicly exposed after death, the folly ceased—the sense of shame prevailed over the recklessness of life. Tarquin nailed on crosses the bodies of those who flung themselves off the Capitoline Hill, in their despair at the hard work imposed upon them: the disgrace of being crueified after death, cured the propensity. But these are instances in which some cause, more or less plausible, can be assigned for the rashness of the parties: there are others in whieh the actuating motives are wholly mysterious; where the suieides follow each other in quiek sueeession, as sheep jump after their leader. Sydenham tells us, that at

Mansfield, in a particular year—in the month of June — there was quite a crowd of suicides; the cause being wholly unaccountable. The same thing happened at Rouen, in 1806; at Stuttgard, in the summer of 1811; and at a village called St. Pierre Monjean, in the Valais, in the year 1813. One of the most remarkable epidemics of the sort, however, was that which prevailed at Versailles, in the year 1793. The number of suicides within the year was 1300,—a number out of all proportion enormous for the population of the town. It can scarcely be argued that "the reign of terror" will account for this; for in Paris, at the same period, the number of suicides did not exceed the annual average; and many other towns of France were as much agitated as Versailles during the Revolution, without being characterized by a similar catastrophe. There is no other reasonable way of accounting for the circumstances than by attributing them to the influence of a blind imitation. Suicide, no doubt, occurs most usually in isolated instances; but we cannot help being struck with the extraordinary fact, that sometimes examples of it are so numerous and simultaneous that it can only be compared to the irruption of a contagious epidemic malady.

Nor is the disposition to imitate less remarkable in the *mode* of suicide. Sometimes, as at Miletus, it is the rage to hang; sometimes to drown, as the women at Lyons did in abundance towards the middle of the last century; or as the "rash intruding fools" in the London Docks have done frequently of late. Sometimes it is the fashion to use the pistol, which began to be much the practice in polite Europe about the time that Goethe's Werther caught the public taste. Some years ago oxalid acid was a favourite poison, as prussic acid often is at present: and the Parisians, it may be added, at one time vie with each other in pitching headlong from high places; while at another they prefer to asphyxiate themselves with the fumes of ignited charcoal.

It is rather amusing, however grave the subject, to find some of our French contemporaries endeavouring to account for the late frequency of suicides in Paris. It was once the custom for all their philosophers, including Voltaire, Montesquieu, and their host of disciples, to give us English the palm of superiority on this point—the only point, perhaps, on which they would give us precedence. Any allusion to the gloomy month of November was enough to raise an association of ideas in which the English, the blue devils, and hanging or drowning, were most prominent. Statistical information, however, has much disturbed these theories in latter years; and the fact that the number of suicides in Paris is to that of London in the proportion of above five to two annually, has given room for much refined speculation.

"The external circumstances," says a late French writer, "which tend to suggest the idea of suicide are very numerous at the present day in France, but more particularly so in the capital. The high development of civilization and refinement which prevails here—the clash of interests—the repeated political changes —all contribute to keep the moral feelings in a perpetual state of tension. Life does not roll on among us in a peaceful and steady current; it rushes forward with the force and precipitation of a torrent. In the terrible *mêlée* it often happens that the little minority, which has obtained a footing high above the multitude for a time, fall down as suddenly as they have risen. The struggles of life are full of miscalculations, disappointments, despair, and disgust. Hence the general source of our frequent suicides. But there are other causes in operation; and not the least,

among them, the strange turn that stage plays and spectacles have latterly taken. The public taste has undergone a complete revolution in this respect. Nothing is more patronized now at the theatre than the display of crime unpunished, human misery unconsoled, and a low literature, impregnated by a spurious philosophy, declaiming against society, against domestic life, against virtue itself; applauding the vengeance of the assassin; and recognizing genius only as it is seen in company with spleen, poison, and pistols. We appeal to all who read the novels of the day, and who visit the theatres, whether what we say is not the fact."

If this be a true picture (and we believe it is) of the high state of *civilization* and *refinement* of "young France," we cannot wonder at the propensity so strongly manifested by numbers of individuals, thus *refined*, to part with life in their moments of ennui. We doubt, however, whether the expedient proposed by the writer just quoted would have all the effect intended. He feels, as well as ourselves, that the tendency to imitation, so deeply implanted in our species, has much to do with the perpetration of self-murder; but *he* thinks that the only remedy to be suggested is the suppressing, on the part of the newspapers, the frequent accounts published of individual instances of the crime. Even were this possible—and few will maintain that it is, knowing how public journalists are ever rather led by, than leaders of, the public taste—it could go but a short way in suppressing the propensity. The true way to set to work is to watch for individual instances of attempts to make away with life, and in every case to punish rigorously, as would be done on the detection of a culprit found proceeding with an intent to commit any other kind of felony. We confidently anticipate that the good that will be effected by persevering in this method will soon abundantly satisfy the most sceptical.

We are not of the number of those—and there are distinguished names among them—who hold that the very act of suicide itself is a proof of the perpetrator's insanity. Did we admit this, we could not refuse the same plea in extenuation of almost any other capital offence. At the same time, let it by no means be supposed that we would deny the existence of a suicidal monomania. Our view of the matter stands simply thus:—Suicide can in many cases be traced to hallucinations or illusions of the mind, to chimerical fears or imaginary griefs: here there is no room for question. But in the great majority of cases we have reason to believe that self-murder is decided on in consequence of no merely fanciful mental affections: some reverse of fortune has happened; some darling object of ambition or love has been irrecoverably lost; some disgrace is incurred or is dreaded; and numerous other motives, many of them disgusting, the offspring of depraved and vulgar habits, might be enumerated*. What is suicide, when committed under any of these circumstances, but an act dictated by the passions, in contravention of the laws of the community, and no more to be excused on the ground of insanity than any other crime proceeding from the same source? Reason itself is manifestly, to a certain extent, concerned in it; a calculation—a balance of evils, is indeed instituted; but the *passions* determine. Will any one contend that the play of impulses so dangerous should be endured, and permitted to disturb society with impunity?

The reprimand of the magistrate has often acted, on such occasions, with

* Foderé mentions the story of an Englishman who advertised that he would, on a certain day, put himself to death in Covent Garden, for the benefit of his wife and family. Tickets of admission a guinea each.

good effect. When Buonaparte heard of some one or two instances of suicide occurring among his troops, in the year 1802, he issued forthwith a proclamation *; which doubtless, had it not proved effectual, would have speedily been followed up by measures more summary and prompt. We give the document below, not for any originality in the fine moral lesson which it inculcates—for the sentiments will be recognized as at least 2000 years old—but because it shews how this extraordinary man considered the propensity to suicide as not beyond the reach of control, and that it was *his* policy to meet it by a check direct—not by suppressing the notice of it through any fear of a dangerous example. If the same policy which has been so laudably commenced here, be only steadily acted upon, we shall hope ere long for the happiest results. If, however, the reprimand do not seem, in certain cases, likely to have due effect, punishment—that of solitary imprisonment, with occasional labour — will scarcely fail to be efficacious. The crime, let it be remembered, is at least the *attempt to commit* a *capital* offence, —a felony against God and the king, "who has an interest in the preservation of *all* his subjects;" and if punishment be not dealt out to the wretched culprit, for his own correction, the infliction of it is surely demanded for the warning and edification of others.

* *Order of the Day. St. Cloud, 22 Floreal, an.* x. —The grenadier Groblin has committed suicide, from a disappointment in love. He was, in other respects, a worthy man. This is the second event of the kind that has happened in this corps within a month. The First Consul directs that it shall be notified in the order of the day of the guard, that a soldier ought to know how to overcome the grief and melancholy of his passions; that there is as much true cousage in bearing mental affliction manfully, as in remaining unmoved under the fire of a battery. To abandon one's self to grief, without resisting, and to kill one's self in order to escape from it, is like abandoning ihe field of battle before being conquered.

(Signed) NAPOLEON.
BESSIERES.

PATHOLOGICAL LECTURES,

Delivered in King's College, London,

By Professor Mayo, F.R.S. &c.

I.—*Of Fractures, and their Union.*

In the process of union after fracture, two forces manifest themselves; one of which is developed in the tissues which surround the broken bone; the other originates in the bone itself.

The first of these forces is the ordinary agent in repairing fractures; that is to say, it operates in uniting fractures,—of the long bones, with the exception of those parts which are contained in synovial cavities, and of those instances in which fracture is unattended with rupture of the periosteum,—of the round bones generally, —of the flat bones, with the exception of those of the cranium.

The second comes into operation in the cases which form the exceptions above stated.

I.—The process of reparation, which originates in the surrounding tissues, has hitherto been minutely studied in one class of fractures alone; in those, namely, of the shafts of long bones. But enough has been observed of the phenomena attending the other instances specified under the first head to make it probable that they fall under the same law.

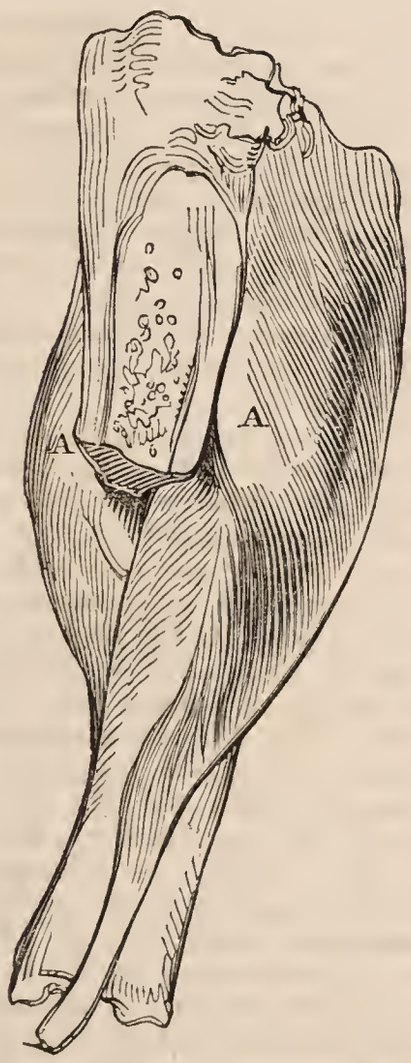
In the reparation of simple fractures of the shafts of long bones, five periods may be distinguished.

1.—The first occupies the three days succeeding the fracture. If a limb is examined in a case where death has ensued a few hours after a simple fracture, the following appearances are met with. There is commonly little extravasation. The soft parts adjacent to the broken bone appear bruised, and in a state of ecchymosis. The medullary membrane near the fractured surface has the same character. The periosteum is stripped irregularly for a small distance from the edge of the fractured ends. During the three days which follow the injury no change takes place in the condition of the parts beyond a commencing absorption of the small quantity of extravasated blood. In cases in which, from the rupture of a vessel of any magnitude, much blood has been poured out round the fracture, the process of reparation is retarded; it must wait the absorption of the blood. For any thing which takes place immediately around a fracture, its setting during the first three days is not requisite. What renders the early setting necessary is the contraction of the muscles,

which, if not from the first counteraeted, is sure to lead to the shortening of the limb. General and immediate swelling of a broken limb, which prevents the ordinary process of setting, answers, at the same time, the same purpose, by keeping the limb stretched to the full length.

2.—The seeond period extends from the fourth or fifth, to the tenth or twelfth day. About the fourth day the textures surrounding the broken part of the bone become infiltrated with eoagulable lymph. The proeess which causes this is closely allied to inflammation. The parts become more vaseular; and lymph, like that effused upon an inflamed serous membrane, is sometimes found upon the ends of the broken bone. The parts around being thickened, there is less freedom of motion at the fracture. The thickening appears to involve every tissue equally; but its especial seat is the cellular membrane.

The adjoined figure, taken from the tibia of a rabbit, killed six days after the fracture, is intended to convey an idea of the general thiekening then present. The



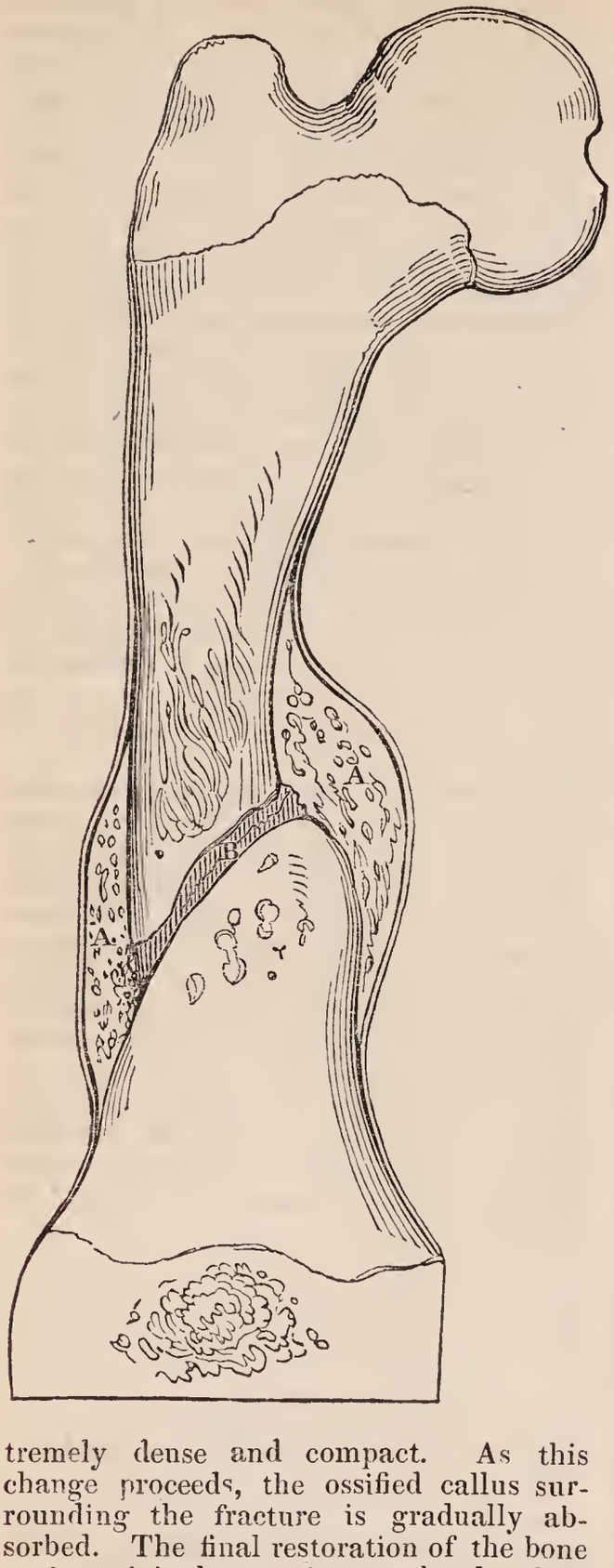
letter A is plaeed upon parts of muscles divided longitudinally, where the fibrous structure could scarcely be diseerned for the opaque gelatinous effusion into their substance.

3.—The third period extends from the twelfth to the twentieth day. During this period the muscles, tendons, nerves, and sheaths of vessels, which have been involved in the eommon infiltration with lymph, disengage themselves from the general thickening, and beeome external to a dense opaque capsule, the *callus*, as it is termed, which surrounds the fraeture adhering to both portions of the bone at a greater or less distance from the line of fracture*. The tendons frequently lie in grooves upon the eallus, and sometimes are contained in ehannels running through it. The quantity of eallus appears to be determined by the quantity of injury done to the bone, and by the gentleness or roughness with which the part may have been treated. An oblique fraeture with one or more separated fragments, for instanee, and a broken bone which has passed undeteeted, will have more callus than a transverse fracture, or one set at once.

4.—In the fourth period, which extends from the twentieth to the thirtieth, fortieth, or sixtieth day, aeeording to the health and vigour of eonstitution of the patient, the callus beeomes cartilaginous, and then rapidly ossifies. The adjoined figure, taken, like the preceding, from a preparation in the Museum of King's College, exemplifies this stage of union. The letters AA are placed upon the callus, which is now cartilage in progress of ossification. A distinet membrane, eontinuous with the periosteum of the sound bone, covers the cartilage. The callus, in this instanee, is of unusual thiekness. The substanee B, which intervenes between the broken portions, is organized, and its vessels are injeeted; but it is soft, like lymph upon an inflamed pericardium. It is in this stage of union that a limb, which has been broken, begins to be used. The fraeture is sometimes so pliant to the end of this period as to allow any erookedness or deformity from bad setting to be reetified.

5.—The fifth period extends from the termination of the preceding to the sixth month. It is characterized by the extension of ossification into the soft substance, whieh directly unites the broken extremities. The bone so produeed is ex-

* There are four opinions as to the source of callus: that it is produced by the periosteum; that it is an exudation from the extremities of the broken bone, particularly from the medullary membrane; that it is derived by direct growth from the animal structure or vessels of the bone; that it originates in an infiltration of the textures adjacent to the bone. The first is the opinion of Duhamel; the second, that of Haller; the third, that of Baron Larrey; the fourth, that of M. Dupuytren. With the last my own observations concur. The account in the text is founded upon M. Sanson's account of M. Dupuytren's theory and my own experiments.



tremely dense and compact. As this change proceeds, the ossified callus surrounding the fracture is gradually absorbed. The final restoration of the bone to its original state is completed subsequently by the formation of cancelli in the dense structure at the plane of union.

The changes which have been described are an effort of Nature towards the restoration of a broken bone: that effort requires to be seconded by art. The broken extremities must have no motion on each other, or they will not unite at all; they must be kept in correct apposition, or the result, if they unite, will be deformity.

In the Museum of King's College are preparations of want of union, or *false joint*, after neglected fracture of a rib,—of the fibula,—of the ulna,—of the radius,—of the lower-jaw,—of the neck of the femur. Motion seems to prevent the callus becoming cartilage; it is converted instead into a fibrous capsular membrane. The ends of the bones within this capsule are sometimes partially united by soft substance; in other instances they freely move upon each other; the opposed surfaces being partly smooth bone of unusual compactness, partly soft white fibrous substance. The friction of the bony extremities moving on each other causes them to enlarge, so as to produce broad articular surfaces, —flat, if the fracture has been oblique,— often concave and convex, if the fracture has been transverse.

The effort towards restoration is transitory. When a false joint has once formed, rest alone is insufficient to repair it, and to produce bony union. But it is possible to excite a fresh action round the fracture; the result of which, assisted by rest and bandaging, will produce consolidation of the parts. The most certain means of re-exciting a salutary action, are the introduction of a seton between the surfaces of the false joint, as recommended by Dr. Physick, of New York, and the keeping it there till the false joint begins to stiffen.

In practice, the prevention of motion at the fracture is secured by the means which provide for the correct apposition of the extremities of the broken bone. The cause which tends to counteract a correct adjustment of the broken portions is the action of the muscles. In some cases, as in fracture of the patella and of the olecranon, and of the lower jaw, the action of the muscles separates the fractured ends: in others it draws them too forcibly together, causing the one to ride over the other, so as to shorten the limb. The most perfect apparatus with which I am acquainted for any case included in the first class, is Mr. Edward Lonsdale's instrument for fractures of the lower-jaw. In the second class of cases there are two principles, on which splints and bandages may be applied with success to prevent shortening. One is their application with a permanent purchase upon both ends of the fractured limb. This is exemplified in the use of Dessault's splint in simple fractures of the thigh. The other turns upon the following law of muscular action. When a muscle shortens, it gains exactly in breadth what it loses in length. If, then, a broken limb, (the arm, for instance, after fracture of the humerus,) be extended to a proper length, and firmly bandaged, (splints to prevent flexion of the fracture being interposed between the reduplicatures of the roller), shortening will not take place; for the unyielding nature of the bandage is a sufficient impe-

diment to that lateral swelling, without which the muscles cannot contract.

II.—Of the instances in which union takes place through the forces inherent in the bones themselves, the most remarkable are fractures of the cranium.

When a cranial bone is broken, no condensation of the adjacent textures takes place—no callus is formed. The final cause of this negative phenomenon is obvious. If a callus were formed along a fracture of the cranium, although on the exterior it would be of little consequence, on the interior it would constitute a tumor, that would compress the brain and disturb its functions. It is more difficult to assign the physical cause. It is plausible to say that the cranial bones are incased in periosteum alone, and thus are not surrounded by the textures, the thickening of which gives rise to callus. But this explanation does not apply to fractures of the temporal bone, or of the basial part of the os occipitis; and I am not aware that these bones unite more favourably than, or differently from, others of the cranium. The fact, therefore, remains an isolated one, and reduced to no principle,—that the cranial bones do not unite by callus. They are left to their own forces for restoration, and the forces operate very slowly. There are two preparations in the King's College museum, which exemplify the process by which cranial are repaired: one is a skull from which a portion had been chipped by the blow of a sabre on one side, and the bone simply cut through on the other. The second is the skull of a person who had been trephined six years before his death. In each of these instances the holes made in the cranium were in progress of being filled up by a gradual extension of thin bone, from the cut, but now *rounded* edges, stretching across the interval.

A second illustration of the ossific forces inherent in bone is found in fractures of the neck of the femur within the capsular membrane.

Sir Astley Cooper has shewn how commonly, in such cases, bony union fails to take place. In general, either there is no union at all, or the union is by soft fibrous substance. Both these contingencies are exemplified by preparations in our museum. In a case in which there was *no union*, the head of the bone had adhered by soft fibrous substance to the brim of the acetabulum, in which it was firmly fixed. The neck of the femur had been nearly absorbed, but its stump had rested against, and moved upon, the fractured surface of the head of the bone; a capsular membrane extended from the margin of the acetabulum to the trochanter major; the surfaces of the false joint were hard and polished, of porcelain bone. In another case, in which the patient died suddenly of apoplexy, thirteen months after fracture of the neck of the femur, *ligamentous union* had taken place. An interesting point in this specimen is the existence of a small ossified callus, exterior to the capsular membrane. It appears evident that the adjacent tissues had commenced the sympathetic process of restorative action first described; which, however, was nugatory, as it could not penetrate through the synovial cavity, to connect itself with, and stretch into, the soft substance which directly united the fractured surfaces. This case had been treated with care in the Middlesex Hospital; the joint had been kept perfectly still: the result was ligamentous union. The patient lived long enough to shew the inability of an isolated bone to form a callus; but not long enough to give time for the extension of ossification from the bone itself.

The fact, however, is well authenticated, that union by bone will sometimes ensue after fracture of the neck of the femur within the capsule. The principle, upon which such union takes place, is the same upon which cranial fractures are united. The process is an extension of ossification from the ends of the broken bone into the connecting soft substance. As this process is extremely slow *here*, as in the cranial bones, and as fractures of the neck of the femur commonly occur at an advanced period of life, it is not wonderful that specimens of bony union in this part are rarely met with.

CLINICAL LECTURE

ON

FRACTURE OF THE PATELLA.

By Baron Dupuytren.

From the "Leçons Orales," published periodically, under the Baron's inspection.

Fractures of the patella present several points of interest to our examination, regarding which authors are not agreed: such, in particular, are the mechanism by which they are produced, the method of treatment, or the apparatus which is most applicable, the manner in which the callus is formed, and, above all, the possibility of effecting an union of the fragments without any intervening medium.

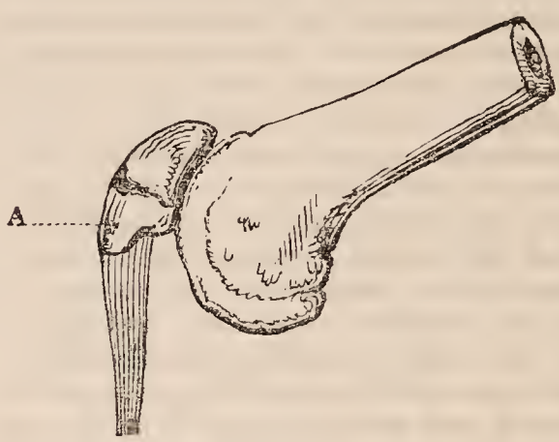
Six patients, with fractures of this kind, have been recently treated in the Hôtel Dieu: all presented a transverse solution

of continuity; five were perfectly cured, without the slightest deformity remaining, the use of the limb having been entirely restored. One is still under treatment. In this last, the fracture was the result of a fall upon the left knee, with a good deal of swelling, caused by extravasation of blood into the soft parts and into the joint. Nevertheless, there was no difficulty in recognizing the nature of the injury. The finger run along the patella encountered a considerable depression where the bone was separated into two portions—one above, the other below. They could be moved in opposite directions, and approximated by the extension of the limb, while crepitation was produced by their friction. Notwithstanding the severe complication of the fracture, the patient has rapidly advanced towards recovery. But that happened which M. Dupuytren has often observed in other cases; the bandage intended to keep the fragments in apposition, only acting upon the skin, forced this between edges of the bones, thus keeping them apart. It was necessary, therefore, to readjust the dressings.

Transverse Fractures. — Fracture of the patella may be produced in two different ways—by force applied directly to the knee in front, or by violent exertion of the extensor muscles of the limb. However, it has sometimes taken place without the muscular exertion having been very great; as, for instance, in the act of leaping, kicking, or the effort of avoiding to fall backwards. In all these circumstances, the patella is only supported by one part of its posterior surface against the anterior face of the femoral condyles; at the same time that the limb being half bent, the inferior ligament and the extensor tendons drag the extremities of the bones strongly backwards. During the effort which then takes place, the femur serves as a point *d'appui* to the forces acting upon the patella above and below, the continuity of which gives way from without inwards.

[We beg to refer our readers to a very instructive lecture on Fractures of the Patella, by Sir Charles Bell, contained in our first volume. The point above discussed by M. Dupuytren is placed in so clear a light, that we shall insert it here.

"This kind of fracture of the patella is most frequently caused by the person stumbling, and then making a violent effort to recover his balance. He suddenly brings the quadriceps extensor into powerful exertion, and the force of this muscle may be imagined, when we consider that it is capable of throwing up the whole body as in a leap: it is this muscle, too, which straightens and then fixes the limb, when we rise up under a heavy load placed upon the shoulders. We can therefore imagine, that in making a violent convulsive effort, when the body is thrown off its centre of gravity, this muscle may act with force sufficient to rend the patella asunder. But there is another circumstance which renders the liability to fracture greater; there is a certain degree of flexion of the knee-joint, during which the patella is more easily broken. About the middle state between extreme flexion and extension of the limb, the patella rests with its upper half upon the convex surface of the femur, while that part of the bone to which the ligament of the patella is attached, projects without support over the space left between the separating surfaces of the femur and tibia. If the knee joint be further bent, and the quadriceps muscle be in a state of spasmodic contraction, thus retaining the patella fixed upon the end of the femur,—and if the ligament of the patella be acting in an angular direction upon the projecting part, the bone is then snapped, as it were a stick broken across the knee."]



A. the projecting part of the patella to which the ligament is attached, and which is apt to be broken off from the change in the direction of the force.

A great number of these fractures have been improperly attributed to falls upon the knee. It has escaped observation, that under such circumstances the weight of the body strikes almost exclusively on the projecting part of the tibia, which receives the ligament of the patella; by the flexion of the limb to a right angle, this projection of the bone comes first to the ground and receives the entire shock, whilst the patella can only touch at its lower extremity. Falls on the knee are often the result, not the cause, of fracture of the patella; it is because this is broken that the individual falls, not in consequence of his falling that this is broken.

Cutting or bruising instruments, directed against the knee, may break the patella into fragments. This accident may also happen from a fall, if the leg be power-

fully bent, and if the bone strike violently against inequalities of the ground; but even in this case the action of the muscles has much to do in producing the fracture.

As I have above pointed out, there are perceptable differences between the fractures of the patella produced by muscular efforts and those caused by direct blows upon the knee. The former are rarely complicated with contusion, laceration of the soft part or of the joints, unless the patient fall roughly after the fracture has taken place; the latter, on the contrary, are often accompanied by extensive injury of the surrounding tissues—sometimes the patella is, as it were, shattered and reduced to a number of fragments, which are separated in every direction, while the capsular ligament is torn, and hæmorrhage takes place into it. These complications render the consequences of the injury very formidable. Here is an example:—

Examination of a Limb some time after Fracture of the Patella.—A patient, advanced in years, affected with a fracture of the patella, without much separation of the fragments, but accompanied by various untoward complications, died last November, after a considerable time with symptoms of mischief in the head and abdomen. The limb was carefully examined. At first sight the fracture was scarcely to be distinguished; the patella was moveable; a furrow, formed by the separation, was imperceptible to the eye, but sensible to the finger; this being carried from above downwards encountered a gutter, which was easily followed. The joint being opened, appeared internally of a deep red, and filled with a certain quantity of sanguineous and purulent matter; there had therefore existed inflammation, terminating in effusion. This mischief in the joint sufficiently accounts for the symptoms under which the patient sunk. The inner surface of the patella exhibited a transverse groove, but higher up than on the external surface. The bone had therefore been broken from below upwards, and from before backwards. The fragments were intimately united, nothing being interposed between them.

On the preservation or destruction of the fibrous layer which covers the patella, depends the facility or otherwise with which the fragments are maintained in their proper places, and also the solidity of the parts after the cure. In fact, this fibrous layer forms a kind of bandage, which retains the fragments opposing their immoderate separation, and serves as a basis for the material which, at a later period, is to effect their union. It may thus be seen with what attention it is necessary to manage it, and to avoid those considerable movements which are often had recourse to by the surgeon, with a view of ascertaining whether a fracture has taken place.

Vertical Fractures.—The vertical fractures are less common than the others, yet such cases are not very rare, although we find little about them in modern treatises on surgery. The oldest example (the only one, perhaps, which has been described with great precision) is to be found in the work of La Motte. The fracture was the result of a fall from an elevated situation: the two portions of the bone were slightly separated from each other, although the limb was half bent. It was placed in complete extension; the knee surrounded by compresses, and moderately tight bandaging. Consolidation was complete in twenty days, and the limb soon regained its usual strength, the callus being but little apparent.

Cases of Vertical Fracture.—About twenty years ago, I admitted into the Hôtel Dieu a middle-aged man, who had broken several bones in consequence of falling from a height. His knee was prodigiously bruised and swollen. He died the third day after the accident. On examining the limb, a longitudinal fracture of the patella was discovered: the bone was divided into two nearly equal fragments; the parts of the bone were mobile, and admitted easily of being displaced; the capsular ligament contained a large quantity of sanguineous fluid. Six months had scarcely elapsed when another man was brought to the Hôtel Dieu: he was drunk, and had been knocked down by a carriage. On the knee and thigh were to be seen the mark of the iron which binds the wheel. It had passed from above downwards over the limb, and the patella was divided in the same direction. Crepitation of the fragments was perceived on examining the limb, and the parts were afterwards retained in position by appropriate bandaging. The cure was going on favourably, when the patient was seized, without any obvious cause, with peripneumony, which carried him off on the twentieth day after the accident. The parts were examined with much care, and a well-formed callus was found, which united the fragments, allowing of but very little motion, and every thing announced a rapid recovery. Three years after, a man came to the Hôtel Dieu to be treated for varix of one of his legs. In examining the limb, I perceived that the patella was universally broad, with a vertical projection. Nothing of the same kind was seen on the other side. On questioning him as to the cause of this deformity, the patient said that some years before, he had fallen and broken

the leg and thigh in several places. The patella had shared in the mischief, and the augmentation of its size proved that the callus had acquired a considerable development. The movements of this bone were easy so long as the extensor muscles were relaxed, but at other times the friction of a considerable irregularity against the condyles of the femur was evident. It appeared that the fracture had been vertical, and that this irregular consolidation had been the result of the unaided efforts of nature, or at best of a position but ill adapted to the purpose.

The following is an example, no less important, of a fracture of this kind. A servant, 19 years of age, of small stature and feeble constitution, and who had long been affected with pulmonary catarrh, fell from the second story to the ground. Striking against the pavement, she received a wound upon the left knee, and a slighter bruise upon her head. She got up, however, but was unable to stand upon the wounded limb. She was carried to bed, and the wound bandaged. On being brought, at a later period, to the Hôtel Dieu, the dressings were removed; and it was then seen that the patella was broken vertically into two unequal portions. The wound was suppurating and accompanied by great pain, extending over the whole limb. The general state of the patient was unsatisfactory. The tongue was foul, the skin hot and dry; she had much thirst, and some confusion of intellect, with insomnolence that refused to yield to powerful opiates. She had also frequent cough and expectoration. These complaints proved fatal.

A certain number of fractures of the same kind have lately been treated at the Hôtel Dieu. It is thus demonstrated that fractures of this kind, which have been passed over in silence in most works, and which have been altogether doubted by some writers, are nevertheless far from rare. But all these facts, at the same time, prove that this particular injury is always produced by direct force applied to the knee, and that it is generally accompanied by wound or bruising to a greater or less extent.

Diagnosis of Fractured Patella. — The diagnosis of fractures of the patella is generally easily established. When the bone is broken transversely, if the individual was previously standing, he falls to the ground and cannot get up; or if he makes the attempt, he immediately perceives that the limb has lost its power: he can only drag the broken limb while he rests upon the other. These symptoms prove the existence of fracture, but on examining the knee it is further found that this is flattened; and on applying the finger over the patella, the space intervening between the fragments of the bone is easily perceived. The superior portion is dragged upwards by the muscles inserted into it, while the lower is retained in its position by the ligament which is attached to it. On raising the limb powerfully, so as to elevate it towards the pelvis, the muscles in front of the thigh are relaxed, and the separation of the fragments of the patella almost entirely disappears. If they be then rubbed against each other, crepitation becomes obvious; which puts an end to all doubt as to the nature of the lesion.

When the fracture is oblique, or longitudinal, it requires a more careful examination to detect it, in consequence of the smaller degree of separation which takes place between the fragments. However, in putting the limb in a semiflexed position, as practised by La Motte, the disunion of the fragments becomes more marked.

Treatment.—After what we have said, it will readily be perceived what the basis of our treatment ought to be. It consists in the application of means proper to remedy the accidents which accompany the fracture, and to effect the reunion with the greatest possible degree of exactness, of the divided portions. Absolute rest of the limb, general and topical bleeding, and emollients, generally suffice to accomplish the former purpose. As to the reunion of the fragments in the case of the transverse fracture, their separation being produced and constantly kept up by the action of the extensor muscles, the first indication is to neutralize this power, and to place the limb in a proper position: for this purpose I employ the following means. First, an inclined plane, formed of cushions placed one above the other, which ought to extend from the heel to the ischiatic tuberosity, and which has the double object in view of opposing the contraction of the flexor muscles, and of putting the extensor muscles in a state of complete relaxation, owing to the position which they give to the limb: secondly, two compresses, about twenty inches in length and four inches wide, made of thick strong stuff, which ought to be hemmed at the edges and extremities; the first is to be pierced with three apertures at one of its extremities, the edges of these apertures being also hemmed, while the other end is to be divided into three flaps. Thirdly, two bandages, three fingers' breadth wide, and from eight to ten yards in length. Fourthly, some graduated compresses.

The foot is first to be enveloped with some turns of the bandage; one of the long compresses is then to be laid on the

dorsal face of the foot; the whole is to be fixed with pins, and by means of two or three additional turns of the bandage. The compress is then to be stretched over the anterior face of the limb. This being done, the turns of the roller are continued, gradually winding it upwards, till it be just below the patella, from which point it is turned back parallel to the limb. Whilst an assistant now raises powerfully the muscles at the posterior part of the thigh, the surgeon surrounds this, at its middle part, with three turns of a second bandage, and then places the end of the second long compress on its anterior surface, where it is fixed by one or two further rounds, turning the extremity from above downwards. One or two more circular turns are made, and the bandaging then continued to the upper edge of the patella, what remains being expended upon the thigh. Graduated compresses are then placed above and below the patella, and the flaps of the one long compress passed into the apertures above-mentioned, and the fragments approximated by drawing the compresses in opposite directions and fixing their extremities, one on the leg and the other on the thigh. The limb is then placed on an inclined plane, the slope of which directs the foot towards the pelvis in such manner that the heel is much higher than the knee and thigh. By these means, which all concur producing and maintaining an exact contact between the fragments, a perfect reunion by bone may be effected.

In ordinary cases the junction takes place through intervening ligamentous substance. Sir Astley Cooper and other surgeons have carefully observed fractures of the patella and neck of the femur, and they have found a transparent fibrous or fibro-cartilaginous substance between the fragments. At the time this celebrated surgeon was at Paris (in 1829), I submitted to his examination some preparations in which direct union had taken place, and in which this fibro-cartilaginous formation was not perceptible. Doubtless this reunion is to be attributed to the long interval which had elapsed since the cure, the callus having thus had time to become ossified. Observe what happens in vertical fractures, and you will be convinced of the justice of this opinion. There, as there is no separation, the callus is always ossified in from six to twelve months. It is, therefore, the separation produced by the action of the muscles which opposes ossification; and when this tendency to drag the fragments asunder is neutralized, the transverse union is in all respects similar to the longitudinal.

Danger of tight-bandaging. — But however firm and well applied the apparatus may be, its action is constantly weakened by the yielding of its tissue and the action of the muscles. Besides, the pressure of the bandages often becomes insupportable, and sometimes even excites the most formidable mischief; an example of which occurred, some time ago, in one of the hospitals of Paris. A man, 43 years of age, fell upon his right knee and broke the patella. Next day the joint was considerably swollen, and very painful; nevertheless, an apparatus was applied similar to that above described. It was so tight, that in the evening the patient suffered extremely, and passed the night in great misery; but it was not till the end of forty-eight hours that his violent and continued complaints induced the surgeon to remove the apparatus. Patches of ecchymosis had already formed on different parts of the limb, and there were even some brown spots; notwithstanding which, the bandage was actually applied as tightly as before; but next day it became absolutely necessary to remove it. Gangrene took place on the sixth day after the accident; and the only hope of saving the patient's life was by sacrificing his limb. Amputation was performed, but he died next day, and the following are the appearances which presented themselves in the limb, sixteen days having intervened since the accident. The fracture was transverse; the fragments were separated about an inch, but still connected by the tendon of the extensors which had not been divided, and by small fibrous bands which ran from the one portion of bone to the other, and which proceeded from the interior of the patella, and not from its surface. At first these bridles were taken for new formations; but this idea was soon disproved, by comparing their resistance with the recentness of their supposed formation. The broken surface did not present any asperities, these having been removed by absorption. Between the two fragments there was a reddish substance, the consistence of which increased in proportion as it approached the fractured surface; at which point, indeed, it was almost cartilaginous.

The treatment of vertical fractures is to be conducted on the same principles as those which are not transverse. The limb is to be raised on pillows, the muscles relaxed, and the fragments kept in apposition. In this way the consolidation takes place in from sixty to eighty days. After this time, if the soft parts allow, the patient may be permitted to exercise the limb gently; taking the precaution to wear a knee-cap.

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SURGICAL REPORTS
FROM THE
LONDON DISPENSARY.

By R. R. Robinson, Esq.
Surgeon to that Institution.

Case I. — *Extensive Prolapsus Recti from debility, cured by tonic and astringent injections.*

Jane Bigg, æt. 72, admitted November 1st, a feeble old woman. Rectum protruded for the first time three weeks ago; it came down gradually, and has at times returned entirely. There is now a large portion (between two and three inches) of the rectum protruding, very red and villous, but not tender to the touch. Urgent tenesmus; difficult micturition; pain in the back; no appetite. After some little pressure the whole was returned through the sphincter. The rectum was so relaxed, that I am sure my whole hand might very easily have been passed into it.

Lot. Aluminis; Quin. Sulph. gr. j. ter die. Ol. Ricini, ℥ss. p. r. n. Rest.

Nov. 2d.—Easier; bowel does not come down more than it did; urine passes quite freely; less pain in the back; has not kept her bed entirely as she was ordered to do.

Ordered to bed. Perstet.

5th.—Six motions from castor oil; rectum again came down on the third instant, from straining, and has kept down until this morning (not, however, to the same extent), when it went up, and is now entirely within the sphincter.—Perstet.

10th. — Much more comfortable; has kept her bed; rectum is now prolapsed only when she goes to stool. A piece of sponge soaked in the alum wash was introduced yesterday into the rectum; but it produced so much pain, that it could not be borne. Bowels open.

Rep. Mist.

12th.—Much stronger; quite easy; rectum does not prolapse.

Rep. Lot. Aluminis, et Quin. Sulph.

19th.—No return of prolapsus; quite comfortable.—Discharged cured.

Case II.—*Prolapsus Recti, with Inflammation and Deposit of False Membrane, cured by antiphlogistic means.*

John Dyer, æt. 53, admitted October 23d, a feeble tremulous man, a long time melancholic. Subject to hæmorrhoids; rectum prolapsed yesterday; has continued down ever since, and discharges a bloody serum. The anus is now occupied by a large tumor, evidently the prolapsed mucous membrane of the rectum, some parts of which are of a bright vermilion colour, from numerous tortuous vessels; others are bluish, from veins shining through; parts are covered with flakes of lymph, of cauliflower-like excrescence, which adhered but slightly to the mucous membrane. The upper portion is dry, and of a deep grey colour, like the state of the fauces when the seat of diphtherite. The whole tumor exceedingly tender and painful; pain greatly increased on pressure; bloody serum continues to ooze from it; he has made numerous and several unsuccessful attempts to return it. Leeches have been applied with some relief.

Pil. Hyd. gr. iij.; Pulv. Ipecac., Pulv. Scillæ, gr. j. o. n. Magn. Sulph. ℥ss.; Ant. Tart. gr. $\frac{1}{8}$, ter die. Rep. Hirud.

Oct. 25th.—Pain very great, preventing sleep. Leeches applied again; would not take; feverish; dysuria; the prolapsed part as great as ever; the mucous membrane highly vascular, covered with an organized false membrane firmly adherent; bowels open. Attempts were again made to return the part by means of sponge dipped in cold water; but though the tumor was diminished by these means, it was not altogether got rid of.

Rep. Mist. Lot. Plumb. ℥ij.; ad. o. i. Tr. Opii. ℥i.

28th.—Tumor less; rather blacker; discharges serum; dysuria; no fever.

Cal. g. iij.; Opii. g. ss. h. s.; Rep. Mist. et Lot.

November 1st.—Dysuria increased; was much griped by the calomel. Ten leeches were applied, and a bread and water poultice substituted for the lotion. He is reported to have lost nearly a quart of blood. The pain immediately subsided; the prolapsus has entirely disappeared; there are only a few piles visible around the anus. He micturates freely; no fever. —Rep.

5th.—Convaleseent; feeble.

Inf. Gentianæ, c. ℥iss. ter die.

Remarks.—In the two preceding cases we have illustrations of the same disease depending upon different causes, and requiring very different treatment. In the first the prolapsus appears to have been owing merely to local and general debility. There was an entire absence of pain and fever. The prolapsed mucous membrane did not appear in an unnatural state; but the whole rectum was exceedingly relaxed. The alum wash acted as an astringent on the prolapsed part; the

recumbent position assisted in preventing the descent when the membrane had been returned; the quinine improved the general health, and in nineteen days the cure was complete*.

In the second case, although there was general as well as partial debility, there was also much general and local irritation, which gave rise to subacute inflammation of the prolapsed mucous membrane; its vascularity was very great: it was quickly covered with a greyish false membrane, which also soon became organized and granular, and showed a tendency at one part to ulcerate, and at another to mortify. It was attended with very acute pain and much fever, and required the antiphlogistic treatment for its removal.

From the striking resemblance the appearance of this membrane had to the tonsil, when affected with one form of inflammation, I was induced to try mercury, which, from its irritating the rectum, as it is apt to do, I was obliged to leave off. From the good effects of the large loss of blood, and the substitution of poultices for cold lotions, it does not seem necessary to resort to mercury to any great extent, except where the disease assumes a chronic form, and there is a tendency to deposition between the coats of the bowel, and then the Hydr. c. Creta or Pil. Hydr. will be preferable to calomel.

Much as it is desirable to return the prolapsed part, as the sphincter acts as a ligature, and still further engorges the membrane, it will, I think, *generally* be found useless, and *always* very painful, to make the attempt in this form of the disease, until the inflammation and swelling have somewhat subsided, and then the part usually returns with facility of its own accord.

Two other cases of prolapsus recti occurred at the dispensary much about the same time as these; one in a boy, æt. $2\frac{1}{2}$, who was cured in ten days by the alum-wash alone; the other was also in a boy, æt. 3, who had a short time previously been the subject of hooping-cough, by which his system had been much weakened; in this instance the membrane was slightly ulcerated; he was, however, entirely cured in three weeks by alum-wash, bark, and soda.

In these instances the prolapsus was chiefly, if not entirely, seated in the mucous membrane. In some cases, however, the other coats of the rectum have been likewise prolapsed.

* I have since learned that she has had no return.

LITERARY CURIOSITIES.

An ingenious contributor to our valued contemporary, the Révue Médicale, has endeavoured to lay down and illustrate certain rules or maxims to be followed by those who are much engaged in mental occupations. Among other topics which he has introduced, he alludes to the very different habits of different authors, when occupied in composition. Montaigne shut himself up in an old tower "pour y digerer librement à loisir ses pensées." Rousseau herborized; it was, he used to say, "en se meublant la tete de foin," that he could think most profoundly. Montesquieu composed the groundwork of the "Esprit des Lois," while reclining in a post-chaise. Milton generally composed at night, sitting in his arm-chair, with his head resting on the back of it. Bossuet sat in a cold room, but kept his head warm with a quantity of coverings. Mr. Fox, after having indulged to excess in the pleasures of the table, would often, when he went home, retire to his study, and wrapping a cloth dipped in vinegar and cold water round his temples, sit engaged in study for ten hours successively. On the other hand, we are told that Schiller wrote most of his best pieces when he had his feet immersed in ice-cold water. Maturin, the author of Bertram, Melmoth, &c. withdrew into the most retired privacy when engaged in composition; when the inspiration seized him, he used to place a wafer between his eyebrows, to announce to his servants that they were not to disturb him. Jeremy Bentham was in the habit of writing all his ideas on small scraps of paper, and then stringing these together, so that they resembled rather a huge file of a merchant's bills, than the manuscript of an author's work. Napoleon, we are told by Bourrienne, when engaged in deep thought, would often be humming or singing a tune all the time, or notching the arm of his chair with the "air d'un grand enfant;" then suddenly he would start up, and point out the design of a monument to be built, or explain some of those mighty projects which used to astonish and terror-strike the world. These, from out an almost infinite number of examples, sufficiently prove how different in different men are the circumstances favourable to mental labour. No general rule can be laid down; and the only advice to be suggested is, that each must work according to his fancy, habits, and ease.

What has been said of literary composers holds equally true of their musical brethren. Some, as Sarti, &c. can compose only in silence and gloom. Cimarosa delighted in noise and brilliancy. Sacchini

found relief, and almost assistance to his ideas, if several kittens were playing in the room beside him; and Paesiello, in his fits of composition, used to bury himself under the bed-clothes, trying to banish from his memory all the rules and precepts of his art, and giving vent to his feelings in the exclamation, "Holy Mother, grant me the grace to make me forget that I am a musician."!!

It is an observation as old as the hills, that great and enduring works can be achieved only by patience and tedious thought. Perfection in any accomplishment, says Girodet, "ne s'improvise jamais." And Antoine de la Salle used to remark of any one commencing a work of importance, "celui n'est que l'ecolier de celui qui le finit." Even Voltaire, who perhaps of all authors had the greatest facility of rapid composition, was well aware of the requisite labour which must be spent in frequently revising his work; writing to M. Dargental on the occasion of a tragedy which he had very quickly composed, he wittily says, "Ma tragedie est finie; mais vous sentez bien qu'elle n'est pas faite. Mon ours de six jours demande six mois à etre leché."

But the tedious labour of long-continued and of often-repeated thought, is by no means the attribute of the authors of the present times; men of science, as well as men of literature, are in a mighty haste after fame and glory, and there is many an "esprit genereux," who, like Champollion, is feeding himself with the hope of leaving "sa carte de visite chez la posterité." Our ingenious contemporary concludes his amusing paper with some sensible remarks on what may be termed the "adjuvantia" of mental labour: having alluded to the advantages of an airy, cool, and quiet study, he then, *en passant*, suggests the propriety of wearing large, wide, and convenient articles of dress (every one knows "les Regrets à ma vielle Robe de Chambre," one of Diderot's best pieces), and points out the injurious effects of stooping too much, or for a great length of time, at a low table, when engaged in writing. It is well (says he) to rise from the table frequently to walk about the room, read aloud, and occasionally to vary the subject of meditation by one of a less grave character. These precepts, although seemingly trifling, are not so in reality. "An atom makes a shadow," was an observation of Pythagoras; and there is as much physiological as mere physical truth in the observation; the slightest organic lesion, the smallest injury, the least perceptible disturbance of health, may become, if neglected, the parent of much serious mischief*.

* Révue Médicale, and Med -Chir. Review.

SYMPATHY BETWEEN TWINS WITH RESPECT TO DISEASES.

M. CAZENTRE, of Bourdeaux, relates the case of twin brothers, born in June 1829. They were sent out to nurse; and during the period of suckling they were not attacked with any severe disease; but it was observed with respect to slight indispositions connected with teething, that both were simultaneously and similarly affected. At the end of fifteen months they were sent home, from which time they were seen by M. Cazentre, who had thus an opportunity of witnessing what follows. In 1831 they both had quotidian fever, which in both began and ended on the same day; both had acute inflammation of the conjunctiva; both had colic, which lasted for twenty-four hours; both had two molar teeth at the same time. In 1832 they had each cutaneous affections and bronchitis simultaneously. In 1833 both had measles, and then scarlatina; in both the supervention and disappearance of the eruptions took place at the same moment. In 1834 they had hooping-cough; then ear-ache,—in either instance simultaneously. Very recently one was attacked in the evening with itching of the back of the neck, with an eruption of vesicles; early next morning the other had the same sensation in the same spot, and accompanied by similar vesicles.—*Gazette des Hôpitaux.*

POETICAL DESCRIPTION OF CHOLERA.

WE should have thought cholera about the last subject which any one would select for a poem; nevertheless, one of our brethren in France has detailed the whole history of the disease, symptoms, treatment, post-mortem appearances, and all in regular and flowing verses. As the production is a curiosity in medicine, we subjoin a specimen:—

"Voyez ce malheureux, courbé sur son baquet,
Les yeux caves, vitrés, s'épuiser en hoquet;
Cet autre, sans repos, pousser des cris terribles:
Sur lui-même tordu par des crampes horribles;
Ses muscles contractés d'un affreux tétanos,
Sur son lit ébranlé font craquer tous ses os.
De cette masse d'eau qu'il vient de boire toute,
Son rein ne reçoit pas, ne rend pas une goutte.
Et vous n'entendez pas, au pied du lit placé,
Un mot de cette voix dont le timbre est cassé.
Approchez, approchez, de cette bouche humaine
Recevez sur vos mains la haletante haleine.
Ah! que de ses poumons l'air qui s'échappe est froid;
Que sa langue est visqueuse et glace votre doigt!
Froissez donc cette peau de violet fardée
Et qui garde les plis dont vous l'avez ridée;
Et cherchez vainement dans ce poignet perclus
Une artère qui fuit, un pouls qui ne bat plus.
Tout en lui, tout est froid; chez ce mort qui respire,
La chaleur bienfaisante a perdu son empire,
Et quand il fait revivre un corps ainsi formé,
Dieu d'un souffle divin doit l'avoir animé."

Némésis Medicale.

GROWTH OF M. BROUSSAIS' "ORGANS."

Some years ago, M. Broussais had his bust executed by an able sculptor, on which occasion, of course, an exact measurement of his several developments was made. The other day this celebrated original conceived the notion of having his head measured again, to ascertain if any change of his "organs" had been produced by the prodigious intellectual labours to which he had been devoted. The application of the craniometre shewed that the "metaphysical protuberance" had increased by three millimetres! This is no great matter, to be sure—but then in four years we could scarcely look for more. The *Journal de Phrenologie*, from which we borrow this curious fact (?), gravely explains the phenomenon by remarking, that since he has become a member of the *Academie des Sciences Morales et Politiques*, M. Broussais has not ceased to exercise his organs of logic and metaphysics!!!—*Gazette Medicale.*

CURIOUS DISTURBANCE OF THE MUSCULAR POWERS.

DISEASE OF THE CEREBELLUM.

A middle-aged man was lately admitted into the Hôtel Dieu. The symptoms were feverishness, great debility, confusion of head, and inability to use his limbs, at least freely. There was no abdominal or pectoral distress. When he was put to bed, it was observed that the head was in a state of continual rotation, even when resting upon the pillow; it was not bent forwards or backwards, but only rolled about from side to side. The muscles of the face were occasionally convulsed, but the mouth was not distorted, nor was the tongue drawn either to the right or left side, although constantly moving with a tremulous agitation. The patient seemed to have a complete control over the flexors and extensors of the head; when assisted, he could raise himself up and sit in bed. The movements of the thoracic and abdominal muscles were healthy. The voluntary movements of the extremities were very imperfect; he could not raise his left arm at all to his head, and his right one only with considerable difficulty. The common sensibility was but little affected in any part; the intellect was confused; he could not answer many questions successively. In the course of a few days all the unfavourable symptoms were aggravated; the trembling oscillation of the head and tongue was incessant; the trunk and limbs lay nearly still and motionless; the forearms were laid across the abdomen, the wrists were bent, and the thumbs drawn into the hollow of the hand, and almost constantly trembling. Every now and then there was a paroxysm of apparently epileptic convulsions, and the patient seemed to recover his sensibility and consciousness for a time, but he soon relapsed into his former stupor.—On dissection, the attention of the physician was directed in an especial manner to the encephalic contents; and it was found that a tumor, of the size of a small walnut, had formed on the tuber annulare, and adhered to the outer surface of the cerebellum. This tumor was formed of nacreous particles and layers, and belonged to that class of morbid deposits described by M. Cruveilhier as consisting of stearine and cholesterine; they appear to be quite inorganic, presenting no traces of vessels, or of cellular tissue.—*Archives Générales*, and *Med. Chir. Rev.*

WESTMINSTER MEDICAL SOCIETY.

26th sesssion, 1834-5.

Subjects proposed for Discussion.

1. On Atmospheric Vicissitudes, and their Influence on the Body in Health and Disease. Dr. Epps.
2. On the Treatment of Cataract. Mr. King.
3. On the Baths of Pfeffers, in the Grison Country; their peculiar locality and medicinal agency. Dr. Johnson.
4. On Headaches. Dr. Webster.
5. On Auscultation. Dr. Addison.
6. On Ulcers. Mr. Malyn.
7. On Morbid Ossification. Mr. Thurnam.
8. On Neuralgia of the Foot, cured by the division of the Sciatic Nerve. Dr. Negri.
9. On the different Methods of employing Mercury in the Cure of Syphilis. Mr. Hunt.
10. On Atonic Congestion of the Brain. Mr. Wade.
11. On various forms of Hysteria. Mr. Edwards.
12. On Neuralgic Pains, and their Treatment. Dr. Copland.
13. On Retention of Urine from Disease of the Prostate Gland. Mr. Pettigrew.
14. On the Influence of the Mind upon the Diseases of the Body. Mr. Smith.
15. On the Effects of Strychnine. Dr. Ryan.
16. On Homœopathic Medicine. Dr. Granville.

John Thurnam, *Sec.*

APOTHECARIES' HALL.

Names of Gentlemen to whom the Court of Examiners granted Certificates of Qualification on Thursday, the 23rd of October, 1834.

Adam James Moore, London.
Thomas Payne, James Grantham, Burgh, Lincolnshire.
Prior Purvis, Royal Hill, Greenwich.
Reginald Read, London.
William Rudd, Hawes, Yorkshire.
Thomas Dixon Jackson, Bentham, Yorkshire.
Thomas Groome, Matthew Hare, Steyning.
Job Harding, Birmingham.
Thomas Swindell Fletcher, Chesterfield.
Charles Robinson, Horbury, Yorkshire.

NEW MEDICAL WORKS.

A Synoptical View of the Diseases of the Chest, by R. M. Hawley, M.D. Folio, 5s. sewed.

The Modern Practice of Physic, by Robert Thomas, M.D. 10th edition, 8vo. 18s. boards.

Consumption Curable, by F. H. Ramadge, M.D. 2d edition, 8vo. 8s. boards.

Carswell's Pathological Anatomy: Fasciculus Sixth—Hæmorrhage. Folio, 15s.

Dr. Henderson's Tabular View of Auscultation, cloth case, 2s. 6d.

Observations on the Spinal Cord and Ganglionic System of the Nerves, by Dr. W. Griffin and D. Griffin. 8vo. 8s.

Treatise on Comparative Physiology, from the German of Tiedemann, by S. M. Gully and J. H. Lane. 8vo. 12s. cloth.

Lectures on the Ordinary Agents of Life, as applicable to Therapeutics and Hygiene, by Alexander Kilgour, M.D. Post 8vo. 8s. boards.

Compendium of Pharmacy, by W. Meade. 12mo. 4s.

Manual of Aphorisms on Chemistry and Toxicology, for Apothecaries' Hall, by R. Venables. 12mo. 7s. boards.

A New Synopsis of Nosology, by G. H. Weatherhead, M.D. 12mo. 3s. boards.

Cataract, description of its Nature, Treatment, &c., by John Stevenson. 12mo. 3s.

Symptoms and Treatment of Malignant Cholera, by William Marsden. 8vo. 2s. 6d.

The Elements of Anatomy, by Jones Quain, M.D. Third edition, 8vo. 18s.

The Surgeon's Practical Guide in Dressing and Bandaging, by Dr. F. Cutler. 12mo. 6s. 6d. cloth.

Mr. Eden has in the press, Outlines of a New System of Philosophy, being a View of the System of Sciential Medicine, or Medicine (and all Human Knowledge) as proveable as Geometry.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *Oct.* 21, 1834.

Abscess	3	Inflammation	71
Age and Debility	140	Bowels & Stomach	4
Apoplexy	9	Brain	4
Asthma	40	Lungs and Pleura	9
Cancer	3	Influenza	5
Childbirth	18	Insanity	8
Cholera*	29	Liver, diseased	2
Consumption	119	Locked Jaw	1
Convulsions	98	Measles	30
Dentition or Teething	7	Miscarriage	1
Diarrhœa	1	Mortification	8
Dropsy	26	Paralysis	5
Dropsy on the Brain	3	Small-Pox	32
Dropsy on the Chest	1	Sore Throat and Quinsey	1
Erysipelas	2	Stricture	1
Fever	20	Thrush	3
Fever, Scarlet	30	Tumor	1
Fever, Typhus	2	Unknown Causes	4
Gout	4		
Hernia	1	Stillborn	18
Hooping-Cough	36		
Indigestion	1		

Increase of Burials, as compared with the preceding week . . . 404

* Of the above number stated to have died of cholera, sixteen were reported by the clerk of the parish of St. Dunstan, Stepney, and nine by the clerk of St. Sepulchre; but as they had neglected to report for several months, it is presumed that not many of these deaths have occurred lately.

METEOROLOGICAL JOURNAL.

Oct. 1834.	THERMOMETER.		BAROMETER.	
Thursday . 9	from 57	to 66	29·92	to 29 80
Friday . . 10	41	65	29 97	29 82
Saturday . 11	33	65	29·91	29 97
Sunday . . 12	39	63	30·03	30·05
Monday . . 13	40	65	30 04	30·00
Tuesday . . 14	45	65	29·90	29·79
Wednesday 15	37	62	29 65	29·69

Prevailing wind, S.W.

Generally clear till the 14th, on which day several light showers of rain fell, the 15th cloudy.

Rain fallen, ·05 of an inch.

Thursday . 16	from 39	to 61	29·35	to 29·26
Friday. . . 17	41	58	29·29	29 59
Saturday . 18	35	55	29·80	29·90
Sunday . . 19	36	57	29·91	29·83
Monday . . 20	54	61	29·73	29·70
Tuesday . 21	50	56	29·95	30·14
Wednesday 22	36	58	29 92	29·76

Prevailing wind, S.W.

Except the 21st, generally cloudy, with frequent showers.

Rain fallen, ·35 of an inch.

CHARLES HENRY ADAMS.

NOTICES.

Our correspondent, "M. D., T. C. D.," ought to give his name; especially as he comments freely on an authenticated communication. The subject, in itself, is possessed of comparatively little interest, without the sanction of the writer's name.

We regret that we cannot make room for the paper of "E. S.:" we lately published an elaborate article on the same subject.

W. WILSON, Printer, 57, Skinner-Street, London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, NOVEMBER 1, 1834.

LECTURES

ON

DISEASES OF THE CHEST,

In the course of which the Application of

PERCUSSION AND AUSCULTATION

ARE FULLY EXPLAINED,

Delivered at the London Hospital,

BY THOS. DAVIES, M.D.

LECTURE V.

THEORY OF THE SIGNS OF DISEASES OF THE LUNGS—(continued.)

AUSCULTATION.

THE subject to which I shall now call your attention is Auscultation.

Object.—What is the object of auscultation? To determine the specific lesions of structure either of the lungs or heart. We shall first speak of it merely in relation to the lungs.

Principles on which auscultation is founded.—What are the principles on which auscultation is founded? There are two: first, the lungs, during the acts of inspiration and expiration, produce certain sounds in the healthy and in most of their diseased states, which sounds are inaudible through the medium of the atmospheric air. The second principle is, that, as solid bodies have the power of conducting sounds better than the atmospheric air, so if a solid body be applied upon the parietes of the chest, those sounds can then be most distinctly heard.

Instruments employed.—Various solid bodies have been used for the purpose of auscultation. The first instrument was made by Laennec at the moment, and consisted of a quire of paper rolled tightly. It is a good conducting body, and would form a fair substitute on occasion for the ordinary stethoscope. The next form was the stethoscope, also invented by Laennec. It consists of a cylinder of wood, a foot in length, and about an inch in diameter, perforated by a canal of four lines in breadth. It is hollowed out at one extremity into a funnel-like form, for the purpose of distinguishing delicate sounds. The funnel is fitted with an obturator, which added, the instrument may be used for the louder sounds, and for examining the movements, &c. of the heart. The stethoscope is divided into two parts, which may be united by this screw, merely for the convenience of carriage. Other forms have been invented, which are still more convenient. The instrument I commonly use is the one invented by Piorry. It is lighter than Laennec's, and answers the purpose equally well. You perceive that this is hollowed into a funnel-form at one end; an obturator is attached to it also, which is usually surmounted by the plessimeter. Sometimes an additional piece is fixed, for the purpose of lengthening it: this however is, I think, unnecessary. Be careful that you choose an instrument rounded at the extremity, to be applied to the chest; for they are often made sharp, and cause pain upon application.

Various materials have been used in constructing stethoscopes, as metals, cardboard; different kinds of wood, as ebony, box, &c. They are now almost universally made of cedar, which is perhaps the best.

Immediate auscultation.—Another instrument, and one which you have always the advantage of carrying about you, is the naked ear; and in most instances it is as good a stethoscope as you can employ. But there are some cases in which it is impossible to use the ear; as, for instance, at the humeral extremities of the clavicles, and in the axilla. Where the patient is a female, it is a matter too of delicacy to use intermediate auscultation in preference.

Position of the patient.—The objects you are to have in view in relation to the posi-

tion of your patient, is to place him in a situation convenient to yourself, and to render his muscles as tense as you can, by putting them upon the stretch. Thus, if you wish to examine anteriorly, you must place him in a chair; let him incline the head backwards, and throw his arms behind the chair: if laterally, then he should incline to one side, and place the arm of that side over the head, and you can then easily examine from the axilla downwards: if posteriorly, then the body must be bent forwards, and the arms firmly crossed in front.

Application of the stethoscope.—There are a few points also to be attended to in the application of the instrument. It should be held as you would hold a pen; facility must be acquired in holding it in either hand, and it must be applied firmly and steadily to the chest, otherwise a rustling noise is created, which often masks the sounds produced by the lungs. You should also apply it perpendicularly to the surface, and not at an angle; because, in the latter case, there will only be a single point of the instrument in contact, and not the whole circumference. Take care that you do not allow it to move backwards and forwards, for in doing so you create sounds which obscure those arising from the lungs. It is also advisable, particularly in a thin person, to interpose something between the instrument and the chest itself. The shirt of the patient is generally sufficient; if not, you may employ a linen cloth or a little lint. Be careful, also, not to examine a patient in a silk dress; for silk also causes a rustling sound, which will deceive you. Stuff and flannel dresses are objectionable on the same account; they occasion noises very analogous to the "rhonchus crepitans;" and I have occasionally seen beginners diagnosticate softening tubercles beneath the clavicles, when the sounds have altogether depended upon the sort of dress worn by the patient, and the loose manner in which the auscultator has held the stethoscope. The extremity of the instrument, on which the obturator is fixed, should always be applied to the chest; the ear, of course, upon the opposite end.

We shall first consider auscultation in reference to the voice; secondly, to the respiratory murmur; thirdly, to the various sorts of wheezing or rhoncus heard in the chest; and, fourthly, in relation to certain sounds occasioned by diseases of the pleura. Perhaps the following tabular view of the sounds will assist your recollection:—

- Auscultation of.....
  - The voice in..
    - Excavations ..... Pectoriloquy .. Perfect. / Imperfect. / Doubtful.
    - Trachea and larynx.
    - Bronchi ..... Bronchophony.
    - Pulmonary tissue.
  - The respiratory murmur in .....
    - Pulmonary tissue .. Pucrile respiration.
    - Trachea and larynx.
    - Bronchi ..... Bronchial respiration.
    - Excavations ..... Cavernous respiration. / Blowing respiration. / Souffle voilé. / Bourdonnement amphorique.
  - The rhonchus in .....
    - Bronchi ..... Rhonchus sibilans or sibilation. / Rhonchus sonorus, grave, or deep sonorous wheezing. / Rhonchus mucosus, or mucous rattle.
    - Pulmonary tissue .. Rhonchus crepitans humid. / dry.
  - The sounds in diseases of the pleura
    - Œgophony.. Simple. / Combined with bronchophony.
    - Metallic tinkling.
    - Ascending and descending rubbing sound.

AUSCULTATION OF THE VOICE.

We proceed to the study of the resonance of the voice:—1st, in tubercular cavities or excavations formed in the lungs from any other cause; 2nd, in the trachea; 3rd, in the bronchial tubes; and, 4th, in the pulmonary tissue itself.

In considering the subject, we must revert to the principles of the instrument, and give some explanation of the theory of the voice. It is an experiment familiar to us all, that if a beam of wood be scratched at one end with a pin, the noise may most distinctly be heard by applying the ear at the other extremity of the beam, though you might not hear it at the same distance by the intermedium of the atmospheric air;—proving incontrovertibly that solid bodies convey sounds better than the air. I shall not enter into the theory of this, because it involves other questions with which we have nothing to do, but I state it as a matter of fact.

Let us now consider some points of the theory of the voice. The voice is produced in the act of expiration; the air then passes through a tube—the trachea—having at its superior part a moveable orifice, called the rima glottidis, an orifice which can contract and dilate, and consequently vary its diameter. The air, in passing through the rima glottidis, produces a sound varying in its gravity, according to the diameter of the opening: if the opening be contracted, it will be acute; if dilated, grave; and I take the liberty of calling this sound the primitive note, in the same way as I should call the sound produced at the embouchure of the flute, when the fingers are off the rest of the holes of that instrument, its primitive note.

The primitive note being thus produced, its sound passes outwards, but in its way becomes modified by the action of the muscles of the pharynx, the velum pendulum palati, the tongue, palate, lips, teeth, &c., to form words named guttural, lingual, labial, palatine, dental, &c. according to the parts which principally operate in producing the modification.

Pectoriloquy.—The words thus formed pass outwards to a distance proportionate to the force employed in forming the primitive note; but, as the trachea is always filled with air, and is in direct communication with the mouth, there is no reason why the words should not descend into that tube. If that be the case, and as solid bodies convey sounds better than atmospheric air, so a solid body applied to the trachea at the moment a person is speaking should convey the voice to the listener with greater intensity than the air at the distance of the length of the instrument used. Try the experiment, gentlemen, with each other—you will find it is so; nay, the voice is so completely conveyed through the stethoscope, that it entirely masks that from the mouth: it is true it is more hoarse, it is not so clear, but it is perfectly distinct: and this sound is the type of that which we shall hereafter describe under the name of *pectoriloquy.*

You may, however, readily suppose that for a tube to resound the voice it is necessary that it should be of a certain diameter: thus the largest reed of the instrument called the pandean pipes can be easily sounded; that facility diminishes as we ascend in the scale to the smaller ones; and, supposing these to diminish still farther until they became capillary tubes, no sounds could be elicited from them.

We have seen that the trachea resounds the voice; its two primitive divisions are of sufficient diameter to do so likewise; so that if the stethoscope be applied, in a thin person, upon the second or third dorsal vertebræ, the words can still be heard, although not so distinctly; but when these primitive bronchi split into smaller branches, which plunge into the substance of the lung, the resonance becomes less and less, and that even is effaced by the respiratory murmur; and when the tubes become capillary, no sound whatever is produced by them.

The consequence that may be drawn from these premises, is, that as the mass of the lungs consists of capillary bronchial tubes and air cells, the *voice should not* be heard at any point of the chest excepting at the second and third dorsal vertebræ of thin persons. Try the experiment, and you will find it as I have stated. We will now endeavour to explain the cause of pectoriloquy.

We shall hereafter have occasion to enter largely into the consideration of an adventitious deposit in the lung, called tubercle—the proximate cause of phthisis. Tubercles exist at first as isolated bodies, gradually increasing in size and numbers, until they unite and form solid masses; these masses soften, and are expectorated: but as they cannot be expectorated through capillary tubes, they burst into those of a larger calibre; and it follows of course, that as this softened matter becomes evacuated, it must leave a cavity proportionate in size to the quantity of the tubercular mass: if, then, a cavity be thus left, it follows also that we have now a space of sufficient diameter to resound the voice in a spot where it *could not* have been heard before. This resonance is called *pectoriloquy.*

All causes producing excavations of the lungs will occasion pectoriloquy—as gangrene, peripneumonic abscesses, &c.

As there are great variations in the size and form of cavities—as their parietes vary in consistence—as they are more or less near to the surface of the lung—so the pectoriloquy will be more or less complete. Thus Laennec has considered this sound

under the three heads of *perfect*, *imperfect*, and *doubtful*.

The pectoriloquy is *perfect* when the words are distinctly articulated through the stethoscope, and when the sign is exactly circumscribed to a spot.

The circumstances necessary to perfect pectoriloquy are, 1st, a cavity of moderate size: if the excavation be immense, as in this case [shewing a specimen], the voice is lost within it. 2dly, That the cavity should be empty. 3dly, That its parietes should be firm: thus, in this preparation, where you see the excavation is lined by a membrane of almost cartilaginous density, the pectoriloquy was complete. 4thly, That the bronchial opening should be sufficiently large. 5thly, That the excavation be near the surface. Even under these favourable circumstances, the phenomenon may be lost for a time, in consequence of a momentary obstruction of the communicating bronchial tube, from sputa: let the patient cough, the secretion will be removed, and the sign restored.

The pectoriloquy is *imperfect* when the voice is not distinctly articulated through the instrument.

The circumstances which cause this imperfection are, 1st, the cavity being multilocular; 2dly, its parietes being soft; 3dly, its incomplete evacuation; 4thly, its distance from the surface of the lung; and, finally, the smallness of the bronchial opening into it.

The pectoriloquy is *doubtful* when the voice is resounded feebly—when we cannot, except with difficulty, distinguish it from bronchophony. We must then bring to our aid the functional and general signs to form our judgment.

Voice in Trachea and Larynx.—The voice, as I before stated, in speaking of the theory of pectoriloquy, is perfectly articulated through the stethoscope when it passes from these organs.

Voice in Bronchial Tubes—Bronchophony.—The two primary bronchial divisions yield articulated sounds over the second and third dorsal vertebræ, in very thin persons. A very strong resonance is also often heard at the upper extremity of the sternum, from the presence of the trachea beneath it; and, as Laennec observes, you should be careful not to confound it with a doubtful pectoriloquy; but, in fact, it is often impossible to distinguish them.

The larger bronchial tubes, as they plunge into the substance of the lungs, produce no resonance; no doubt, because the air contained in the cells is an insufficient conductor of the sound. Thus we find that any cause tending to solidify the lung, so as to render it a better conductor, will allow the resonance of the voice in these vessels to be distinctly heard. These causes are hepatization of the organ, extensive pulmonary apoplexy, and accumulation of tubercles. This sound has been called, by Laennec, *bronchophony*. It differs from pectoriloquy, inasmuch as the voice does not penetrate the instrument, nor is it heard articulated; its tone is different, and the sound is more diffused.

Voice in Pulmonary Tissue.—For the reasons I have before mentioned, the voice cannot be heard in the pulmonary tissue.

RESPIRATORY MURMUR.

The sounds produced by the passage of the air in inspiration and expiration, or the *respiratory murmur*, should be studied in the pulmonary tissue, the trachea, the bronchi, and in pulmonary excavations.

Respiratory Murmur in Pulmonary Tissue.—If you apply the stethoscope or the naked ear to the chest, particularly of a child of six or seven years of age, you will there hear distinctly, during expiration and inspiration, a perfectly soft murmur. It is impossible to convey by words the nature of sounds, for these are sensations that must be acquired by and for yourselves. I can only speak analogically, and say a sound is like this or that; for simple sensations admit of no definition. In the case under consideration, you hear a slight noise both in the act of expiration and inspiration—something like the soft murmur of a pair of bellows, in which the valve does not click. Laennec has well expressed it, by saying that it is like the sound produced by the occasional deep inspirations made by a person profoundly sleeping. Unless you obtain a knowledge of this normal sound, you will make no progress in auscultation. The respiratory murmur has nearly the same intensity over every part of the chest; however, it is less loud upon the scapulæ and vertebræ, because of the intervening bones, and most distinct in the axillæ, where there is the least mass of interposing muscles.

It is important here, as in percussion, to know whether the sounds are alike at all periods of life. They are not; for they are infinitely more audible in the earlier periods than in old age, and for the same reason I have mentioned before—namely, that digestion, nutrition, circulation, and consequently respiration, are more active in children than in grown persons. It is on this account that I recommend you to study the sound first in a child.

Differences also in the intensity of the respiratory murmur occur in persons of the same age: thus you will find in some it is very indistinct, in others very loud—so loud, that it is like that of a child, and has been consequently called *puerile* respiration. The latter particularly obtains in women, and in men of nervous tempera-

ments. This important consequence follows—that for the purpose of detecting disease, you should not compare the respiratory murmur of two individuals, but you should compare it in the different parts of the chest of the same person.

Some few practical points are necessary to attend to, in examining a person for this sound. In the first place, you should use the stethoscope without its obturator, and although the murmur may be heard through the clothes of the patient, yet the fewer they have on the better; indeed, if they be of silk, or certain sorts of stuffs, it is impossible to hear so delicate a sound at all. Sometimes, too, the patient is alarmed at the examination—especially if it be the first; they will suspend, interrupt, or precipitate their respiration: wait a few moments patiently—desire them to breathe naturally, without effort, and then you will commonly hear the murmur very well. If it be not distinct, tell them to make a deep inspiration, or sigh. I often find that the inspiration following a cough gives the murmur better, let that cough be voluntary or involuntary. Remember, however, that no act of volition on the part of the patient can increase the sound to the puerile character.

What are the inferences we are to draw from this respiratory murmur? Whenever it is heard in a given portion of the lung, you may be certain that there the organ is permeable to the air, and not diseased; but whenever it is not heard, you may be then as certain that the lung is impermeable, and diseased. The causes of the impermeability of the lungs to air, are various; it is impossible I can detail them now, as I should too much anticipate my subject; but the most common are hepatization, apoplexy of the lung, the accumulation of masses of crude tubercles, and effusions into the pleura, compressing the viscus.

It is important to observe, that whenever the respiratory murmur is absent to any considerable extent, the energy of the respiration increases in the healthy parts of the lungs, and the murmur there puts on the character of that of childhood, or it becomes *puerile;* and you draw the inference, that whenever the puerile respiration is heard, there is disease in some other part of the organ. This is a rule having but one exception, which we shall speak of in a future lecture.

Respiratory Murmur in Trachea and Bronchial Tubes.—If the stethoscope be applied to the trachea, or to the sides of the neck, a loud sound is heard during respiration; the same may be distinguished, although not with equal intensity, in thin persons, at the upper part of the sternum and at the root of the lungs; but when the bronchial tubes divide, and pass into the substance of the viscus, this sound is no longer to be heard, in consequence of the indifferent capacity of the air in the air-cells to conduct it, and from its being masked also by the respiratory murmur of the pulmonary tissue.

Bronchial Respiration. — But when the portion of the lungs becomes solidified by hepatization, or by the presence of tubercles in masses, then, as no respiratory murmur is caused by the impermeable air-cells, and as the solid organ is a better conductor of sound, the respiration is distinctly to be heard in the bronchial tubes; and of course the sounds are loudest where these vessels are nearest the surface. They are therefore of the greatest intensity at the root of the lungs and at the points corresponding to the upper lobes, at the anterior superior parts of the chest, and in the axillæ. This sound is called the *bronchial respiration.*

Respiration in excavations, or cavernous respiration.—The sounds produced by the respiration in cavities formed either by tubercles, peripneumonia, or gangrene, are very loud, and of the bronchial character; but they evidently give to the ear the feeling of a resonance in a capacity of much larger dimensions than that of any bronchial tube; these sounds may be considerably increased by desiring the patient to cough. Nothing can be more decisive of the presence of an excavation than the noises produced in this manner.

Blowing respiration.—This is a modification of the bronchial and cavernous respirations, in which, during inspiration, the patient seems to draw the air from the ear of the observer through the stethoscope, and blow it back again with force during expectoration. This takes place during quick respirations, or when the patient coughs or speaks.

The physical causes of this phenomenon are—1. The presence of an excavation, which approaches closely to the walls of the chest, in consequence of the thinness of the parietes of that excavation; this I have noticed frequently. 2. Laennec says that the same sound is produced from a large bronchial tube near the surface being surrounded by condensed substance, as when the lung is consolidated from peripneumonia, or compressed by pleuritic effusion. I am but little inclined to doubt Laennec's correctness, but I confess I have often sought for the sound from this cause, but hitherto without effect.

Souffle voilé.—Laennec also describes a modification of the blowing respiration, in which a moveable veil seems to be interposed between a pulmonary cavity and the ear of the auscultator. This is heard during coughing, speaking, or respiring.

The causes of the *souffle voilé* are, according to the same author—1. A superficial

cavity, with thin and supple parietes, not adhering to the costal pleura; so that whenever the patient speaks, coughs, or inspires, the loose and thin portion of the walls of the excavation flaps against the ribs. 2. A peripneumonic abscess, whose parietes are generally hepatized, but presenting here and there some points of engorgement; and 3. Where bronchophony is given by a large bronchial tube in peripneumony, part of the course of that tube having the lung between it and the ear of the examiner, in a healthy state, or only slightly engorged.

Bourdonnement amphorique.—Finally, you occasionally see an immense cavity, in which scarcely any of the lung is left, except a portion at the root, and a thin layer of its substance adhering to the costal pleura. Here pectoriloquy is lost; the cavity is too large to admit of it, but the respiration puts on a peculiar character. It is no longer a cavernous respiration, but something like the sound produced by blowing into a large empty bottle, or like the buzzing of a bee in a vase, whence Laennec has termed it *Bourdonnement amphorique.*

RHONCHUS.

We now proceed to the description of the various sounds known under the general appellation of Rhonchus.

Definition.—All noises which may be made during the respiratory act, produced by the air traversing fluids, or by a partial contraction of the aerian tubes; they accompany, and are rendered more evident by coughing. Such is the definition given by Laennec. There are various species of this sound.

Rhonchus sibilans, or whistling sound; its characters are various; it is sometimes a prolonged whistle, of divers tones; sometimes of very short duration, and like the chirrupping of birds; it is occasionally similar to the clicking sound produced by the opening and shutting of a small valve.

Causes.—It appears to depend upon a small quantity of viscid tenacious mucus obstructing more or less the smaller bronchial ramifications, or from a swelling of the internal membrane of a bronchial branch of small or middle size; the first cause produces the clicking noise, and occasionally the sibilation, either of which may be made frequently to disappear by desiring the patient to cough, by which the obstructing mucus is dislodged. The prolonged whistle depends upon a thickened state of the mucous membrane.

Rhonchus sonorus gravis, or dry sonorous wheezing. The sound in this case is grave, and often very loud, frequently like that of snoring, or of the bass string of a violoncello when rubbed by the finger; it is often similar to the cooing of a dove.

Causes.—Laennec believes that this sound is occasioned by some change in the form of the bronchial tubes, as their compression by a tumor or engorged gland, or by a local and slight inflammation of the pulmonary tissue; or that it may be produced by the presence of very tenacious mucus; and finally, from a swelling of the mucous membrane at the commencement or opening of a bronchial tube, whereby its diameter is rendered smaller at its orifice than in the rest of its course. The two last causes are certainly the most common.

Rhonchus mucosus is a sound like that produced by the blowing of bubbles in a solution of soap and water. The ear can recognise most accurately the various sizes of these bullæ, and the tenacity of the mucosities in which they are formed. Their quantity and their situation in the lung can most easily be detected by a slight habitude; in fact, this sound is so very distinct, that I find it is usually the first that is determined by the student.

Causes.—The rhonchus mucosus is produced by the air passing through fluids accumulated in the trachea or bronchi, or through purulent or softened tubercular matter. Thus it occurs in catarrhs, where the secretion is considerable, or in hæmoptysis, when blood obstructs the air passages; it exists also in tubercular excavations, containing a certain quantity of mucus or softened tubercular matter; it is found also in gangrenous or peripneumonic abscesses, when they burst into one or more bronchial tubes, so that the air communicates freely with their cavities; but in these three last cases this sound is modified in its character; the bullæ are larger; they are evidently contained in a more circumscribed space; a cough, or a forced inspiration, conveys to the ear the sensation of the rhonchus being formed in an excavation in the lung. The loudness of the rhonchus mucosus, and the largeness of the bullæ, would then, perhaps, be better expressed by the term gurgling than any other, a term equivalent to the "gargouillement" of Laennec.

This gurgling sound is occasionally distinguished by the patient himself, and he will point to the situation of the cavity as being the part of the lung from whence the expectoration proceeds; this is, however, somewhat rare, but I have met with it. Laennec describes instances in which the pulsation of the subclavian artery produced a slight mucous rattle, from the vessel striking the parietes of the excavation. This is certainly a very rare circumstance; I cannot say I have observed it.

This rhonchus may, although very seldom indeed, be heard at a distance from the chest, or, which is more frequent, be felt by its communicating its vibrations to the hand; thus, as in this preparation [shew-

ing it] the tubercular matter found its way through the parietes of the chest, formed a tumor which, as you perceive, has burst externally; this tumor gave upon pressure a gurgling sound. A second case mentioned by Laennec is, where a tubercular excavation bursts through the pleura, whose two laminæ have been previously united by an abundant cellular tissue, yet sufficiently loose to allow of the infiltration of air and pus within it. A third case, is of an extensive multilocular cavity, half full of pus or softened tubercular matter; this also occasionally produces a rhonchus sensible to the hand. He had not sufficiently verified this sign. I have no hesitation in saying, that I have distinguished it now frequently.

The intensity of the mucous rattle varies, of course, according to the quantity of fluid which the air traverses, according to the force with which a patient is made to respire or cough, and the distance at which the accumulated secretion is placed from the ear of the observer, so that the sound may be *distinct* or *obscure;* these differences are very easily determinable by practice.

Rhonchus crepitans.—There are two varieties of this sound, the one described by Laennec as the humid crepitation, the other as the dry.

The humid crepitation.—This is very analagous to the sound produced by the crepitation of salt exposed to a moderate heat, or to that made by the insufflation of a dried bladder, or still more to the sensation given to the hand when compressing a healthy lung; it carries with it also a distinct feeling of humidity.

Causes.—Whenever air and fluid coexist in the aerian cells, humid crepitation may be heard; thus it is the pathognomonic sign of the first stage of peripneumonia, or inflammatory engorgement of the lung. It is very distinct when that organ becomes œdematous; it is also occasionally found in hæmoptysis. It is a sound of great practical importance, and deserves your fullest attention.

The dry crepitation, or *crackling sound*, is heard principally during inspiration. This sound communicates to the ear the sensation of dryness and unequal dilatation of the pulmonary cells; it is very like the noise produced by blowing into a dried bladder, and the bullæ of the crepitations are much larger than in the preceding species.

Causes.—The dry crepitation is the pathognomonic sign of vesicular and interlobular emphysema of the lungs, particularly the latter.

ŒGOPHONY.

This sound may be easily confounded with pectoriloquy and bronchophony, and consequently requires the greatest attention on the part of the student.

Laennec gives the following description of its characters:—Simple œgophony consists in a particular resonance of the voice, accompanying or following the articulation of the words. The voice appears more acute and silvery, and trembles upon the surface of the lung; it is rather like an echo, repeating the words and final sounds, than the voice itself. It is rarely introduced into the tube of the stethoscope, and still less frequently traverses it completely. It has another constant character; it is trembling and saccaded, like that of a goat, and its tone is very similar to that animal's. When the œgophony occurs near a large bronchial tube, particularly at the root of the lungs, then a bronchophony more or less marked is generally superadded; and this combination gives rise to various modifications of sound. Thus it may be like the voice transmitted through a metallic speaking trumpet, or a broken reed, or a comb, or like a person speaking with a piece of money placed between the teeth and lips; and, finally, it is often exactly similar to that of the personage familiar to us under the denomination of Punch.

To hear this sound distinctly, the stethoscope should be applied firmly upon the parietes of the chest, and the ear lightly upon the instrument.

Causes.—It exists only in those cases in which there is a slight effusion into the chest, either from an attack of acute or chronic pleurisy, or hydro-thorax; and in proportion as the effusion increases, the ægophony disappears; as the fluid is absorbed or evacuated, the sign comes on again, evincing that it depends upon the presence of a thin layer of fluid between the pleuræ.

The œgophony is never heard in a single point, like the pectoriloquy, but is always more diffused; thus it is commonly heard between the base of the scapula and the corresponding part of the vertebral column, in the whole contour of the inferior angle of that bone, and in a zone of three fingers' breadth, extending from the middle of the scapula to the nipple. Occasionally, however, the sound may be heard all over the side affected; it then evidently depends upon adhesions between the two pleuræ, preventing the lungs receding from the ribs, adhesions which admit, nevertheless, of an insinuation of fluid sufficient to produce the phenomenon.

Œgophony seems, then, to depend upon the natural resonance of the voice in the bronchi, transmitted by the intermedium of a thin and trembling layer of effused fluid, and rendered more sensible by the

compression of the pulmonary tissue, by which that tissue becomes a better conductor of sound.

It is at the upper portion, or edge of the layer of fluid, that the œgophony is most distinct: thus the extent of the sound above described supposes the patient to be seated; but if he be placed on the face, then the fluid will gravitate towards the sternum, and the sign will almost entirely disappear from the space between the base of the scapula and the vertebral column, and will be heard at the side only, and in a direction transverse to the ribs. It will be found, too, that as the absorption of the fluid continues, the œgophony leaves the upper part of the chest, and is heard lower down, following evidently the course of the fluid.

The œgophony may be always considered as a favourable sign, because it proves that the effusion of fluid is but slight: its persistance many days, and after the acute period of the disease, demonstrates that it does not increase in quantity, and, generally speaking, shows us that the affection will not become chronic.

The œgophony, like pectoriloquy, may be sometimes suspended, when the bronchial tubes are obstructed by accumulated secretions, preventing the voice descending through them; but, as catarrh does not very commonly co-exist with pleurisy, the sign rarely ceases suddenly.

The argentive and trembling tones of œgophony are generally most perfect at the anterior and lateral parts of the chest; for when the phenomenon occurs between the base of the scapula and the vertebral column, it is almost always joined with the natural bronchophony, in consequence of the bronchial tubes being there of a larger size. It is in the latter part that the voice occasionally completely traverses the stethoscope.

Œgophony and bronchophony are combined in cases of pleuro-peripneumonia.

Œgophony, bronchophony, and pectoriloquy, may be all united in cases of pleuro-peripneumonia, combined with abscess of the lung.

The theory of œgophonism is not yet well understood: in all probability it depends upon a partial flattening of the bronchial tubes by the compression of the effused fluid, and that the voice is modified in passing through them in that state, and subsequently in passing through the secretion itself.

METALLIC TINKLING.

Laennec so denominates this sound from its analogy to that produced by slightly striking with a pin a cup of metal, glass, or porcelain, or by dropping a few grains of sand into such vessels. The sound is heard during respiration, coughing, or speaking; the sound is feeblest, however, during respiration, loudest when the patient coughs: it sometimes happens that it is heard only during the respiratory act, and not at all while coughing or speaking; but this is a rare circumstance.

Causes.—The metallic tinkling is caused by the resonance of the air, agitated upon the surface of a liquid contained in a preternatural cavity formed within the chest. It occurs, therefore, in two cases:—1. In pneumo-thorax, combined with effusion. 2. In a large tubercular excavation, containing a certain quantity of very liquid pus.

In cases of pneumo-thorax, combined with effusion of the cavity in the pleura, Laennec asserts that it is necessary for the production of the metallic tinkling that there should exist a fistulous communication between the pleura and bronchi, such as occurs in tubercular or peripneumonic abscesses, or from gangrenous eschars opening at once into both: that it constantly happens under these circumstances, and in the greatest perfection, is incontestible; but that such a communication is essentially necessary I doubt, inasmuch as I have, in a great many cases in which the metallic sound was most distinct, endeavoured to discover, post-mortem, a fistulous orifice without success. We shall revert to this subject when we arrive at the description of the specific diseases of the lungs, in which this sign may be heard.

FROTTEMENT ASCENDANT AND DESCENDANT.

These are sounds so called by Laennec from their causing, during inspiration and expiration, a sensation to the ear as if a bone were rubbed by the finger, and heard through the stethoscope, giving the feeling of substances ascending and descending, and rubbing against each other with a certain degree of roughness. The same kind of sensation is also distinguishable by the hand, but infinitely more obscurely.

Causes.—This phenomenon depends, at least in the greatest number of cases, upon interlobular emphysema of the lungs, and is combined with the dry crepitating rhonchus. It is supposed, also, that the same sound might be produced by the projection of osseous, cartilaginous, tubercular, or scirrhous deposits, from the surface of the lungs or pleura; but this has not yet been proved.

[In page 67, in the paragraph above that contained within the brackets, the word "*left*" should be "*right*," and the word "*right*" should be "*left*."]

PATHOLOGICAL LECTURES,

Delivered in King's College, London,

By Professor Mayo, F.R.S. &c.

II.—*On Hypertrophy and Atrophy of Bone.*

I.—Hypertrophy is the abnormal increase of a part, without inflammation or change of structure. Bones are liable to partial and to general hypertrophy—that is to say, the abnormal enlargement may affect a portion or the whole of a bone: the latter case, however, is rarely met with.

Hypertrophy of bone hardly constitutes *disease;* or if the more serious cases deserve that name, the transition from health to disease is, on this occasion, extremely gradual, and made by insensible steps. It is a principle, which reigns in the animal economy during health, that exercising a part strengthens it. Parts of which the action is *mechanical*, become thus *mechanically* strengthened. The arm of a blacksmith acquires, through daily exertion, additional muscular force, *weight*, and *size:* the bones in it enlarge; their crust becomes harder and of a compacter grain; and the lines upon the surface, which give attachment to tendons, become rough and prominent ridges: this is health.

In Mr. Cheshire's apparatus for weakness of the spine, the weight of the head and trunk is thrown upon the haunch-bones and the chin. A segment of a steel hoop rests upon the ossa ilii, from the middle of which a rod rises vertically behind the spine, higher than the head, over which it arches, terminating in a hook: a strap passing beneath the chin of the patient is suspended to the hook. In those with whom this instrument has been used, the lower jaw, having to sustain unusual pressure, has often enlarged, throwing out a bony swelling at the part where the chin-strap tells. This swelling might be classed as a *disease:* yet it evidently results from no other physical cause than the salutary law of growth, that a part is strengthened in proportion to the exertion imposed upon it: agreeably with that law, when, on discontinuing the use of the instrument, the call for increased strength in the jaw ceases, the bony swelling disappears.

Such a swelling upon a bone—an instance of partial hypertrophy—is called an *exostosis.*

Perhaps nothing is more wonderful in physiology than the correctness with which the proper size, and shape, and outline, of the different parts of the body, is maintained during infancy and childhood, while growth is in rapid progress, and the constituents of the frame are perpetually changing. It is all the less surprising that during this period one or other of the bones should sometimes grow out abnormally. This incident produces another instance of exostosis. The clavicle is one of the bones the most subject to it. The disorder requires no treatment: it is almost sure to disappear after a year or two; either the rest of the bone *grows up* to the enlarged surface, or the superfluous part is absorbed, and not replaced in the next substitution of new bone.

Exostoses, however, are more frequent when the body has recently attained its full growth. Nor is it difficult to imagine why this should be. But the disease is not limited to the early or middle periods of life. A patient, about sixty years of age, who was under my care in the Middlesex Hospital, had an exostosis of the first rib, which threw forward the subclavian artery so as to present the appearance of subclavian aneurism. He had not observed the swelling till some months before he applied for advice.

The causes of exostoses, as of other enlargements, cannot generally be traced: it is, however, certain that they are occasionally produced by mechanical causes,—by pressure, or by a blow. The most frequent seats of this affection are the upper part of the humerus, the upper part of the tibia, the lower portion of the femur. The adjoined figure (fig. 1) represents an exostosis in the last-named situation. The shape of exostoses varies with the kind of bone upon which they grow. In the long bones they are generally narrow, and of greater height than thickness; sometimes largest at their base, in other instances the reverse. In the flat bones they are commonly broad, with no great elevation; in the round bones, rounded or nodular. To this law, however, there are many exceptions.

Exostoses being in their nature healthy bone, present in their structure all the varieties which healthy bone exhibits. Sometimes their grain is dense and compact: this is especially the case when they grow from the cranial bones—as upon the temple, or into the orbit. At other times they present a crust of variable thickness, and an internal cancellous structure of greater or less closeness and regularity of lamellation. The adjoined figure (fig. 2) represents a section of the natural size of the exostosis before represented. It has a thin cortex and a light cancellous structure. The cortex of the original bone appears partly to have remained in its original plane—partly to have been lifted with, and to have formed the crust of, the exostosis.

Exostoses have not more sensibility than healthy bone: but they are susceptible of inflammation, and then become the seat of

Fig. 1.

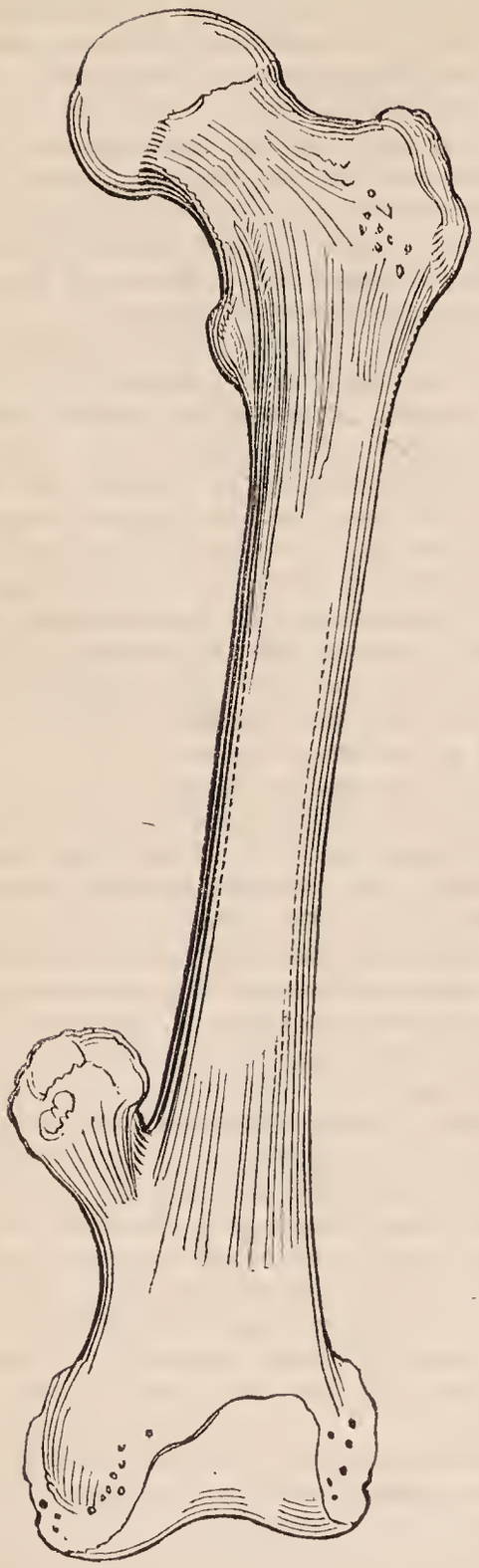

Fig. 2.

pain; and they often occasion pain by their pressure upon more sensible parts. Upon the same principle, when in the neighbourhood of important organs, they are liable to disturb their functions. Fixed local pain in the head, and epilepsy, have been produced by the growth of spines from the inner surface of the cranium.

Sometimes the tumor which forms an exostosis is not originally bony. A child, six months old, had a soft tumor growing from the front of the alveolar process of the upper jaw. Sir Astley Cooper removed it by an operation, but it grew again, and became hard. The subject of this disease grew up a fine young woman in every respect, but for the tumor of the jaw, which for a time grew with her growth. At the age of 19, when I was consulted, the tumor produced great deformity. It projected an inch and a half beyond the under lip, and pressed the upper lip, which adhered to it, to the nose. Its length was $2\frac{1}{2}$ inches; breadth, 2; height, $1\frac{1}{2}$. The tumor was now an exostosis of cancellated, but extremely hard bone. It had not enlarged during the preceding five years. With Sir Astley Cooper's advice, and in his presence, I removed it. It is nearly three years since the operation was performed. The tumor has not returned.

The principles to which a surgeon looks in the treatment of exostoses are the following:—

Time may do something. In the common course of nutrition,—of removal and substitution,—exostoses may disappear spontaneously.

The nutrition of an exostosis may be disturbed by exciting increased action in adjacent parts. Upon this principle the tumor is sometimes dispersed by blisters, issues, or setons, applied in its vicinity.

There are medicines (the action of which is indeed imperfectly understood), that modify the growth of parts, and affect the nutritive processes in bone especially; these are mercury and iodine. They are sometimes useful in exostosis, and may be tried, if not contra-indicated by particular circumstances.

Finally, an exostosis may be removed by an operation, the base of the tumor being sawn through, or cut with a chisel or forceps. After this an exostossi does not commonly return. There was a young woman, a patient in the Middlesex Hospital, who suffered severe pain from an humeral exostosis, which Mr. Cartwright removed after trying many remedies for its relief. In a year the exostosis returned. A rubefacient plaister was now applied round the arm, when an abscess formed near the second exostosis, and it disappeared.

Exostoses sometimes perish suddenly by necrosis.

There is a preparation in the King's College museum of a tibia and fibula greatly enlarged, but not appearing to have been inflamed. The structure of the bones appears healthy. The person of whom I purchased this specimen assured me that the bones were from a Barbadoes leg. It is certainly not unlikely that such a state of the bones should occur in that disease.

A patient died in the Middlesex Hospital, who had been affected with epilepsy. The convolutions of the brain were remarkably flattened. On examining the cranium, the inner table of the frontal, parietal, and occipital bones, appeared hypertrophied; *all the arterial grooves were of unusual depth.* The bones were not particularly vascular, nor bore, I thought, the appearance of having been inflamed.

A sort of hypertrophy of bone is its extension into the ligaments and muscles. In one of our preparations, the femur is fixed immoveably in the acetabulum by ossification of the anterior part of the capsular ligament, and of part of the iliacus internus. Mr. Langstaff, in his rich pathological museum, has a beautiful specimen of ossification, which appears to have spread from the femur, and involves the vastus internus, the fibrous structure of which is converted into bone.

The alliance between the ossification of ligament, muscle, and tendon, and exostosis, (or at all events the origin of the former from the bones), appears to me well established by the remarkable skeleton, called Mr. Jeff's, in the Hunterian museum, of which the following is Mr. Owen's excellent account:—

"It is the skeleton of a man, 39 years of age, and is remarkable for the production of ossific growths from many parts, of various dimensions and extent—some forming exostoses merely, whilst others pass from one part of the skeleton to another, and have thus produced anchylosis, or immobility of most of the members. The exostoses may be observed on the os frontis, mastoïd process, and occiput, and in other parts of the skeleton where muscles are attached, as near the angle of the lower jaw, where the masseter is inserted, at the extremities of the spines of the vertebræ, at the coronoid processes of the ulnæ, in the femur, at the part where the glutæus maximus is implanted.

"The second and more extensive kind of ossifications have in general followed the course of the larger muscles, and may be seen, on the right side, in the situation of the deltoïd, joining the clavicle and acromion of the scapula to the humerus, in the situation of the supraspinatus, and passing from the inferior angle of the scapula to the humerus, in the situation of the teres major and latissimus dorsi. On the back, more extensive ossifications of the muscles appear, which affix the scapulæ on both sides to the sacrum and ilium, and to the spines of the lumbar and dorsal vertebræ. On the left scapula, the ossification of the teres major has not extended quite to the humerus; but the dorsum presents a singular process or ossification, with smooth sides, and a flattened overhanging margin, like an auxiliary or second spine.

"From the pelvis, ossifications extend from the sacrum and ilium in the direction of the glutæus magnus, and from the tuber ischii and os pubis in the course of the biceps and triceps abductor muscles: these extend to the right femur. Ossifications of the tendinous and ligamentous parts are still more common, producing anchylosis of the vertebræ, of the left elbow-joint, of the tibia and fibula to each other on both sides of the ankle-joint, and general consolidation of the bones of the tarsi."

II. *Atrophy* is degeneration of growth, deficiency in the size and weight of a part, and commonly of one or more of its usual constituents in particular. Atrophy in bone is attended with deficiency of bone-earth, or more correctly of the *proper osseous tissue.*

I amputated the leg of a young woman for disease of the tibia, which had existed eleven years. At its commencement it had attacked the head of the bone, and implicated the knee-joint, which became anchylosed. The disease then left the knee, but continued in the middle and lower part of the tibia; the patient could not use the limb, and it wasted where it was not diseased. One of the most remarkable features in the preparation from this case, which is

preserved in our museum, is the atrophy of the upper portion of the limb. The head of the tibia is a thin shell of bone; and instead of its proper close cancellous structure, a few fine bony threads alone are drawn across it. Among these the marrow lay in large masses, semifluid, supported by the medullary membrane alone.

In childhood, and particularly in young females, the round bones are liable to a form of atrophy, which corrects itself with advancing years. The weakness involves the ligamentous structures. It shews itself at the ankles, at the knees, but principally in the back; the spine becomes curved from weakness, giving first at the loins, but at the same time bending above in the opposite direction, to preserve the perpendicular; the curvature is sometimes forward. This complaint is atrophy from arrest of structural growth, and is to be treated on principles purely physiological.

In old age the bones become weaker and more brittle. The cortex is thinner; and in it, and in the cancelli, the proportion of osseous tissue is diminished. This is the cause of the frequent fracture of the neck of the femur in elderly persons. The mechanical disadvantage of the obliquity of the part now becomes apparent. In its progressive degeneration of structure, the neck of the femur is even, when not broken, depressed and shortened.

Sometimes in middle life the bones are unusually brittle. A stout-looking man was a patient in the Middlesex Hospital, in 1818, under one of the physicians, with some trifling ailment: he was cutting a slice of bread, when his humerus broke. I happened to have the care of it; it united as readily as another bone; and this is observed in general of atrophied bones, except in extreme cases, or where a morbid structure additionally exists in the bone,—or where the system is scorbutic, or tainted with lues, or loaded with mercury; (which causes are likewise said to produce fragility of the bones.)

In persons affected with carcinoma of the breast, the ribs are commonly found atrophied, so that they may be readily cut with a knife. Their cortex is very thin, and the osseous plates and threads of the cancellous structure are thinner and fewer than natural. The cells contain a reddish-brown and slightly-gelatinous fluid. The bones of the extremities are likewise often unusually brittle: sometimes, but very rarely, carcinomatous tumors are found in these brittle bones; of this there is a specimen in our museum. But generally nothing is to be observed in the brittle long bones of persons who have died of schirrhus. A patient in the cancer ward of the Middlesex Hospital, for carcinoma of the breast, broke her arm in raising herself in bed. Not many weeks after this she died. I carefully examined the bone, but to the eye, and when cut through with the saw, it seemed as compact and hard as healthy bone.

In the College of Surgeons there is a specimen of an *adult* humerus, of which the crust is as thin as a wafer, and the interior looks as if filled with tallow; towards the lower part, for about two inches above the condyles, the bone appears to be a vascular sac of membrane. Mr. Hunter considered this to be *mollities ossium*. In the museum of the London Hospital are specimens from the body of a woman who died at the age of 72, which very much resemble that which I have referred to. She had been confined to her bed for four years with paralysis of the lower extremities: the hip and knee-joints had been for a considerable time permanently fixed; her appetite was always good. A month before her death, on making a slight exertion, the right thigh-bone broke, and shortly after the right arm. Mr. Hamilton, with very great liberality, has given to the King's College museum a preparation of one of the bones from this body; and the following is his account of the general post-mortem appearances.

"The lungs were healthy; the heart rather large and soft; the abdominal viscera and mesenteric glands healthy; there was considerable calcareous deposit in the lumbar and iliac glands. In the cranium, when the dura mater was opened, three or four ounces of fluid escaped, and there were some small tubercles attached to its under surface; the substance of the liver was natural; the articulations were in a healthy state; the periosteum covering the bones generally appeared natural, but over the trochanters it was entirely detached; the bones of the cranium and pelvis could be cut with a knife, while the ribs and vertebræ were but slightly affected, and scarcely less firm than usual; the bones of the lower extremities were far more extensively diseased than those of the upper; the thigh-bones consisted of a mere shell of bone filled with a fatty substance; the fractured extremities of the femur and humerus had a slight ligamentous connexion."

In Mr. Wilson's description of a case of mollities ossium, in a woman who died at 48 years of age, the only bones which were not entirely softened were the sacrum and the bones of the feet. The bones consisted of a thin, flexible, and brittle shell; and in the place of cancelli, a substance resembling coagulated blood was found, with cells in it containing oil.

The weakness of the spine in young females, which I have already adverted to, is perhaps the slightest form of a disease, which, when aggravated, produces the

most serious deformity—this is *rachitis*, or *rickets*. The disease is a softening of the bones, which commonly shews itself in early childhood, but may make its appearance at any time before puberty. In the worst cases, the spine becomes curved in various directions, the sternum projected, the ribs depressed and twisted, the sacrum pressed towards the pubes; the clavicles become more bent and prominent forward; the os humeri is distorted outwards; the lower ends of the radius and ulna are twisted in the same direction; the thighs are curved forwards or outwards; the knees fall inwards; the spine of the tibia becomes convex; and the feet are thrown outwards: that is to say, the trunk and limbs become bent in directions determined by the action of the muscles, and by the weight and pressure which they have to sustain.

The flexibility of the bones is produced by deficiency of the proper osseous tissue. The crust of the bones becomes extremely thin, and the osseous cancelli nearly disappear. The bones are lighter, and may be cut with a knife; they present throughout a spongy or cellular tissue. Mr. Stanley observes, that "the consistence of ricketty bones which he has examined is nearly that of common cartilage, and that they present throughout an areolated texture; the cells are in some parts large, and contain a brownish gelatinous substance*." Mr. Stanley remarks, that he has never noticed any expansion in the articular ends of ricketty bones.

There is a natural period to this disease: as the body reaches its full growth, sooner or later the atrophy ceases, and the bones become set in the deformity to which they were compressed when in their softened state. The formation of bone is now often carried to excess: strong ridges are formed in the concavities of the curvatures of the long bones, and the edges of the vertebræ enlarge and encroach upon the intervening ligaments. In one remarkable specimen in our museum of rachitic curvature forwards of the spine, eight adjoining vertebræ are by the extension of ossification anchylosed and converted into one bone. Mr. Stanley has pointed out that there is method in this abnormal growth, and that the superabundant bone is placed exactly where the rachitic curvatures of the skeleton render it mechanically weaker.

Preternatural brittleness and flexibleness of bones are the result of different degrees of the same cause. Moderate atrophy produces brittleness; a greater degree, flexibleness with greater brittleness.

* Medico-Chirurgical Transactions, vol. vii.

CURE OF SUBCUTANEOUS NÆVUS, BY THE SETON.

To the Editor of the Medical Gazette.

Sir,

About the year 1830, a short paper, on the "Cure of Subcutaneous Nævus, by the Seton," was published by me in the North of England Medical and Surgical Journal; and as it was then doubted by some, who were polite enough to notice that paper, whether so apparently simple a remedy was adequate to the removal of these growths, I read with pleasure the communication of Mr. Macilwain on the same subject, which appeared in the last volume of the Medico-Chirurgical Transactions of London. Some degree of discrepancy, however, exists in the result of the seton in our respective cases; for, while in mine it was not required to be continued beyond six or eight weeks, in Mr. M.'s the plan was extended to a period of nearly six months. This would seem to be owing to two circumstances; namely, the small proportionate size of the seton employed by that gentleman, and his having depended solely on this measure.

In the cases which I have already given to the public the effects of the plan were expedited by the addition of some irritating application to the channel of the seton, which seemed to be necessary, especially in the two latter instances, to produce, within a moderate period, the requisite amount of inflammation. On these occasions the nitrate of silver and sulphate of copper were used; but in cases which have occurred to me subsequently, the potassa fusa, as more certain in its influence, was substituted with the happiest result.

The rule originally propounded to guide us in the application of the seton ran as follows:—"In employing the seton it is necessary to secure two material objects; the suppression of hæmorrhage from the vessels divided by the needle, and, subsequently, a degree of irritation sufficient to excite inflammation and suppuration throughout the diseased mass. The first may be accomplished by having the skein of thread large enough fully to occupy the apertures made by the needle; and the second, by using a needle that will admit, relatively to the dimensions of the tumor,

a seton of considerable proportions. If, however, the irritation fall short of the proposed objects, easy means are afforded, by the newly-established channel, of applying other irritants, or even caustic, to the residue of the morbid growth, without destroying the integument, which in Letlow's case, it will be seen, was required, and answered the best expectations*."

By the way, Mr. Macilwain observes, that the *first* of my published cases was dated subsequently to the period when the seton was suggested to his mind, and practised in the case he has reported; but if he would take the trouble again to refer, he will find that the date even of my *last* anticipates by, at least, *two years* the first he has related.

The example noticed by Mr. Lawrence, in a clinical lecture delivered two or three years ago, did not appear to me to be one to which the plan in question was at all adapted; and, therefore, his failure in that instance by no means negatives the utility of the seton as employed under particular circumstances; nor did he, in my humble judgment, persevere sufficiently to bring about a successful issue, even had the case been judiciously selected. At the time I read the lecture my impression was, that his mind was too strongly imbued with the idea that the vascular structure of nævus was so unsusceptible of inflammatory action, that no ordinary means were competent to light it up in a sufficient degree to accomplish the effect intended. The cases recently brought before the public, as well as those which preceded them, do, I hope, shew satisfactorily that this opinion is not, at least to the full extent of his remarks, correctly founded.

The circumstances which claim a preference for the seton, as I think, are developed in the following paragraph:—

"I would not be understood to suppose that the seton commands the preference in every case, or is intended to supersede the other means recommended for its cure. It is only under particular conditions that I should even advocate its adoption; for it is, comparatively speaking, tedious; and, on the whole, not less painful, perhaps, than the plans at present in use. Two principal circumstances weigh with me in choosing the seton; namely, the magnitude and situation of the tumor. If the size of the nævus be such as to preclude the employment of the knife, caustic, or ligature, then I am of opinion that the seton may be adopted with greater certainty of success than the tying of the arterial trunk which supplies the part to which the tumor is attached, as in the two first examples related, which would admit only of one of these alternatives. Then, again, as to situation: if it should be an object to save deformity, which undoubtedly it is, the seton would appear to be admissible in those venous subcutaneous growths which affect the head or face, or such parts as are liable to be left uncovered by the dress, especially in females, unless such growths, from their small dimensions, allow of removal by the knife, so as to leave a more linear cicatrix after healing. I apprehend that the seton is followed by considerably less disfigurement than the destruction of the part either by caustic or the ligature, which must necessarily be restored by granulation; for, instead of having one large cicatrix, as in the latter case, the greater portion of the integument covering the tumor being preserved in the former, little more than the scars produced by the needle remain, and hence the deformity is really trifling," &c.

The seton was applied to the following case, which was recommended to me by my friend Dr. Shaw, rather for the purpose of putting its efficacy further to the test than as superior to the other plans, any one of which might have been used, I apprehend, with an equally favourable result. To my intelligent pupil, Mr. A. W. Dumville, I am indebted for the narrative.

"William Bancroft, æt. 40, presented himself, May 19th, 1834, with nævus, situated on the right cheek, beneath the outer canthus of the eye; it was as large as a walnut, raised considerably from the surrounding surface, and of a venous colour; and, though chiefly involving the skin, it had extended to the cellular texture below, so as to represent the compound character of cutaneous and subcutaneous nævus. The patient states, that formerly it existed only as a mark, but that within the last three or four years it began to project, and has in-

* North of England Medical and Surgical Journal, vol. i. p. 66.

creased in all its dimensions. He cannot say, however, that it has undergone any change the last half year. A seton was this day passed through the tumor in a horizontal direction, which corresponded with its long diameter.

"May 24th.—The swelling indurated and tender, with some increase of bulk; but discharge not yet established.

"26th.—Discharge from the orifices free, and intumescence somewhat diminished, which induced Mr. F. to fear that the irritation was not enough to obliterate the diseased structure; he therefore partially withdrew the seton-thread, which he slightly touched with potassa fusa, and then returned it—a step which occasioned apparently very little pain.

"30th.—Suppuration pretty copious, and swelling reduced. The seton removed.

"June 4th.—The nævus greatly fallen, so that it appears scarcely elevated from the surrounding parts; it also has a firmer feel, as though its cells or vessels contain a solid deposition.

"10th.—Tumor little more than one-fourth its original size, and reduced to the level of the skin; but Mr. F. thinks it advisable to pursue the same plan with the remaining portion: hence, to-day, a small seton was passed in a perpendicular direction, and this was suffered to remain about eight days, after which it was withdrawn, having excited vigorous inflammatory action throughout the remaining growth.

"July 28th.—No appearance of the nævus is now discernible, and the surface of the integument covering the site of the tumor is smooth and equal, and scarcely shews a scar to entitle one to pronounce that a process of cure, such as the seton is intended to institute, had ever been employed."

In truth, the cicatrices at this time are so insignificant, that it requires a close inspection to discover them.

I am, sir,
Your obedient servant,
THOMAS FAWDINGTON.

Manchester, Oct. 25, 1834.

SURGICAL CASES

Treated in the Naval Hospital of St. Petersburgh.

BY HARRY LEEKE GIBBS, M.D.
Member of the Royal College of Surgeons of London.

Continuation of the Case of Iwan Nikitin, operated on for Subclavian Aneurism.

JAN. 26, 1823, 22d day.—Convalescence proceeding rapidly; beginning to use his fingers, which are of the natural warmth, and possessed of sensation. Friction employed night and morning with flannel and camphorated spirits to the whole of the arm, the breast, and parts about the left scapula.

29th day.—The increase of lax fungus so great, as to require the frequent application of the kali purum. By its use it is kept under the level of the integuments with the aid of straps of adhesive plaster; and by persevering in this plan, with moderate pressure, the wound was firmly consolidated on the 39th day (Feb. 12th), when he was walking about the ward, and enabled to assist in tying his neckcloth with the left hand. The patient had now recovered his former good looks, and the various functions of the body were regularly performed. A feeble tremulous pulsation was again perceptible in the brachial, ulnar, and radial arteries; the limb was becoming fleshy, and was well nourished by the numerous vessels of the shoulder and upper part of the arm anastomosing with those of the neck, breast, back, and scapula, and, to some extent probably, by the extreme branches of the left epigastric artery, which inosculate largely with those of the mammaria externa. In this way I imagine the blood to have been directly determined to the primary arteries of the arm for a short time after the operation, sufficiently so to stimulate them to a partial and imperfect action, and to maintain the vitality of the limb. But when the communication by anastomosis was fully established, and the secondary set of vessels were sufficiently dilated, the blood flowed, by preference as it were, into these new channels, and less was transmitted through the original vessels.

Feb. 27th.—Owing to the greater demand, the circulation had become more

equally balanced throughout the limb, and the pulsation in the large arteries was now readily felt synchronous with those in the right arm. Dismissed cured, and strictly enjoined to continue to wear his warm glove and flannel waistcoat; and to guard against the effects of cold, an order was obtained to give him the lightest work, and that too within doors. From time to time I had the satisfaction to watch the progress and restoration of the limb, and, at the expiration of a twelvemonth, to hear that he was enabled to pursue his ordinary occupation.

In the autumn of 1826 the subject of this interesting case was admitted into the medical department of the Naval Hospital, with febris catarrhalis, and oppression at the chest. By his express wish I visited him, and recommended a venesection of ℥xx., which was purposely abstracted from the median cephalic of the left arm, the veins of which were turgid, and arterial action going on as vigorously as in the other arm. He soon left the hospital, and continued his work as cooper till the 9th December, 1823, when he was discharged the service (having served his time), and allowed the usual pension.

St. Petersburgh, Sept. 25, 1834.

TREATMENT OF A CASE OF DELIRIUM TREMENS.

To the Editor of the Medical Gazette.

Sir,

The case of delirium tremens succeeding apoplexy, related in your journal of last week, by Mr. Robbs, brought to my mind a similar one which occurred in my practice about the middle of last July. As the case ended favourably, you may, perhaps, consider it not altogether uninteresting.

I was called to a labouring man on Wednesday, who was lying in a state of insensibility. I was told he was in the habit of drinking freely, when he could obtain liquor. On the Sunday and Monday previous, he had been drinking. On calling to him, or shaking him, he would open his eyes with a wild stare, but seemed to have scarcely, if any, consciousness of what was going on around him. He would then relapse into his former state. His pulse was not much disturbed; on touching it, it gave the idea of being passively distended; the pupils were contracted; the face rather pale. I took about 12 oz. of blood from his arm: the pulse became softer, but in other respects he remained nearly as before. I then ordered him four pills, each containing one drop of croton oil; one to be taken every two hours. He took all these without effect. I then sent him four more, with similar directions. On the following morning (Thursday) I found him considerably better: the croton oil had acted well. He was sensible, but still had a wild look. His tongue was cleaning at the edges; there was a brown yellow fur in the centre. I ordered him to take immediately a pill of calomel and colocynth, and a purgative draught every three hours. At night, symptoms of delirium tremens came on, but he was not violent; he wanted to leave the house, but was easily restrained. I gave him tinct. opii, ℥xl. immediately. On Friday morning he was not better. I then ordered the same quantity of laudanum every five hours. He took three doses without effect. I then directed them to give him a pint of porter, which was the drink he was accustomed to: he drank it, and fell asleep very shortly after. When I saw him again he was convalescent.

I should mention that in this case, as in Mr. Robbs's, there was rather profuse perspiration.—I am, sir,

Your obedient servant,

George Parsons.

53, Upper Marylebone-Street, Portland-Place, October 24, 1834.

ON THE COMPARATIVE MERITS OF DR. BELLINGERI'S AND SIR C. BELL'S WRITINGS AND OPINIONS ON THE FUNCTIONS OF THE FIFTH AND SEVENTH PAIRS OF CEREBRAL NERVES.

By G. Negri, M.D.

Concluding Remarks.

The description given in my last paper, of the origin of the facial nerve,

and its two distinct trunks, taken from the anatomical part of Bellingeri's Dissertatio, so well supported by unobjectionable authorities, is quite sufficient to point out at once the fallacy of Mr. Alexander Shaw's remarks on the double functions attributed to it by that author.

I think it, therefore, unnecessary to bring forward, in this journal, that part which contains its physiology, as the reader may find, in the last number of Dr. J. Johnson's Medico-Chirurgical Review, a translation of Chapter II. of Bellingeri's Dissertatio, which contains it.

From what, then, has been published, both in that quarterly, as well as in this weekly periodical, on the physiology of the fifth and seventh pairs of cerebral nerves, enough, I believe, of Bellingeri's work has been laid before the public, to exhibit a full and accurate idea of the Italian physiologist's doctrine on the functions of those nerves. Let him now be judged impartially, but only after his own words and opinions, and not through the highly improper and erroneous statements of incompetent critics.

Before, however, leaving this question, I must direct the attention of the medical profession to some other important points, so forcibly insisted upon by Mr. Alexander Shaw, in his already well-known article. "The fundamental principle," he says, "which pervades every sentence of Sir Charles Bell's works, is this (and it was announced in the unpublished tract.....printed in 1811)—that a single nerve cannot bestow both motion and sensation..... ; whenever they are combined, it is a sign that the nerve is compound—that it originates by two distinct roots from the brain, or spinal marrow."—"It is not to be supposed that this principle.....rested altogether upon the experiments on the nerves of the face. It was not with these nerves that Sir Charles Bell began his investigations. It is well known that he commenced by experiments on the spinal nerves. It was after having ascertained by experiments (first made so far back as 1811, and *repeated in March* 1821), that the two roots of these spinal nerves possess distinct endowments, *that he was led to examine the functions of the fifth pair, and to classify it with the spinal nerves.*"—"When we speak, therefore, of the validity of the proofs by which he established that the fifth is a double nerve—the nerve of sensation and mastication—we must not omit to take into consideration the *experiments on the spinal nerves, which corroborated his conclusions.*"

Now Sir Charles Bell, in his unpublished tract, printed in 1811, says:—"The spinal nerves being double, and having their roots in the spinal marrow, of which a portion comes from the *cerebrum*, and a portion from the *cerebellum*, they convey the attributes of both grand divisions of the brain to every part.....But the nerves which come directly from the brain, come from parts of the brain which vary in operation; and in order to bestow different qualities on the parts to which the nerves are distributed, two or more nerves must be united in their course, or at their final destination. Hence it is that the first nerve must have branches from the fifth united with it: hence the *portio dura* of the seventh pervades every where the bones of the cranium, to unite with the extended branches of the fifth: hence the union of the third and fifth in the orbit: hence the ninth and fifth are both sent to the tongue: hence it is, in short, that no part is sufficiently supplied by *one single nerve, unless that nerve be a nerve of the spinal marrow, and have a double root*—a connexion (however remotely) with both the *cerebrum* and *cerebellum**."

Thence it is evident, that although Sir Charles Bell had assigned particular functions to each of the double nerves of the spinal marrow, and performed experiments to ascertain this position, yet, in 1811, he considered still the fifth, together with the other cerebral nerves, as a simple nerve, entirely distinct from those of the spine: and when the English physiologist *repeated* those experiments, *in March* 1821, and was led to examine the functions of the fifth pair, and to classify it with the spinal nerves, the Italian physiologist had already published, in 1818, his classical Dissertatio, which he publicly defended in the 9th day of May of the same year, before the Royal College of Medicine in Turin.

Now let us consider with what degree of anatomical evidence the fifth pair of cerebral nerves was, by Sir Charles Bell, classified with the symmetrical nerves of the spine.

In the sixth edition of his "Anatomy

* Page 23.

and Physiology of the Human Body," printed in 1826, he expresses himself, on that point, in the following terms:—"Pursuing the subject, and still directed by the anatomy, the next matter of inquiry was to ascertain how far the fifth nerve of the encephalon corresponded with the spinal nerves. It was discovered that the fifth nerve bestowed sensibility on the cavities and surfaces of the head and face. . . . . In short, in regard to their property of bestowing sensibility, the fifth and spinal nerves were identified.

"But was the fifth nerve, in *other essential circumstances*, similar to the spinal nerves? On recurring to anatomy, and comparing the fifth nerve of the encephalon with a spinal nerve, the resemblance, both in man and brutes, was very remarkable. In both nerves we see the double roots: the anterior root passing the ganglion, and the posterior root falling into it, or forming it. On following back the anterior root, we may perceive that it comes out betwixt the *funes* of the *pons varolii*, *and, in fact, from the crus of the cerebrum.*

"Observing that there was a portion of the fifth nerve which did not enter the ganglion of that nerve, and being assured of this fact by the concurring testimony of anatomists, I conceived that the fifth nerve was, in fact, the uppermost nerve of the spine—that is to say, the uppermost, or most anterior, of those nerves which order the motion, and bestow sensibility, in its extended sense, on the frame of the body.

"One circumstance I may notice in passing: the origin of the fifth nerve being above, or anterior to, the termination of the column of the spinal marrow for respiration, *it can receive no roots from it.*"—Pages 386, 387.

Then, according to these *essential circumstances of similarity*—"The arrangement (says he) of this symmetrical system of nerves is this: there is an obvious division of the *medulla spinalis*, corresponding to the *cerebrum* and *cerebellum; every regular nerve has two roots—one from the anterior of these columns, the other from the posterior: such are the fifth pair*," &c.—P. 390. Therefore we must expect to find out the origin of the larger portion of the fifth entirely from the *cerebellum*, and that of the smaller one solely from the *cerebrum: from it* (in fact) *all the nerves which are agents of the will pass out.*" So Sir Charles Bell said, in his unpublished tract, 1811, at p. 27.

Now let us see how the origin of those two portions of the fifth has been made out in the anatomical part of Bellingeri's Dissertatio.

"*Of the Fifth Pair, or Trifacial Nerve**.

"This nerve emerges from the outer side of the middle annular prominence, and from the inner surface of the extremities of the peduncles of the cerebellum, where the latter are extended over the protuberance just mentioned.

"The actual origin of the nerve, however, is not there. As Santorini says:—'I do not call that the origin of the nerve, by which it emerges in a collected form from the annular protuberance, or the pons varolii; but that from which its very numerous and diversified fibres spring.' A great many anatomists have taken pains to assign the origin of the fifth; but they are by no means agreed on the subject. Santorini points out a threefold origin—namely, from the crura cerebelli, from the annular protuberance, and from a spot between the corpora olivaria and pyramidalia. Winslow coincides with Santorini as to the origin between the olivary and restiform bodies. Malacarne, on the other hand, denies this position, and admits but one origin only, from the peduncles of the cerebellum. But Gall has described and beautifully depicted the bundles of fibres which emerge between the corpora olivaria and restiformia; and he has, moreover, by deriving his illustrations from comparative anatomy, cleared up the doubt which Santorini entertained, as to the probable origin of those fibres from the olivary bodies themselves. Gall, in fact, found that in fishes, the ganglion from which the nerve proceeds was quite separate, and that the nervous filaments, even at their proper origin, are quite distinct from the common mass.

"It is therefore settled, that there is in the first instance a double origin of the fifth nerve—from the peduncles of the cerebellum, and the olivary bodies. Santorini, in his later researches, ascertained that there are no fibres arising

* For the translation of the following quotations, as well as for those in my preceding article, I am indebted to the kindness of the Editor, who thought it better, for the convenience of the readers, to have the Latin parts translated into English.

from the proper substance of the annular prominence; and Girardi, with praiseworthy diligence, has confirmed this view. Soemmerring adds, that he had seen the fifth arising from the medullary processes of the cerebrum, in the very floor almost of the fourth ventricle. But I doubt whether there be not some typographical error in that passage where he speaks of the ultimate extremity of the fifth pair being in the very wall of the *fifth* ventricle.

"The manifold fibres of the fifth, proceeding from different quarters, are all collected and formed into a single trunk, divided, however, from its very outset, into two bundles; so that the trunk of the fifth pair manifestly is composed of two portions. Scarpa has a fine drawing of the nerve as it proceeds from the substance of the brain, and in its twofold condition. Willis, too, and Vieussens, were acquainted with the same peculiarity; so that Paletta was quite justified in laying down two distinct nerves as proceeding from the lesser portion: in accordance with which I shall, in what follows, treat of both portions separately. One of these is anterior and superior in its origin—that is, the lesser portion; the other is posterior and inferior—the greater: both are composed of many and distinct fasciculi, separated at their very origin either by cellular tissue, blood-vessels, or medullary laminæ; the larger portion is that which properly corresponds with the trunk of the fifth."

"*Of the Greater Portion of the Fifth Nerve.*

"The greater portion, at its egress from the peduncles of the cerebellum, presents a tubercle or medullary papilla*, much softer than the consistence of the fifth nerve: this was first detected and most minutely described by Bichat. Nervous filaments adhere to this papilla on every side: they have been reckoned at so many as thirty-four, forty-five, and even fifty, by Wrisberg. They are of unequal thickness at their origin, and as they proceed to the semilunar plexus; nor do they lie parallel to each other, but are variously intertwined and connected as they cross. Willis, Vieussens, Haller, and Zinn, overlooked this peculiarity in their plates; but Prochaska has given a representation of it. This interlacing of the fibres is not only observable in the trunk of the greater portion of the fifth, but in the twigs proceeding from it, as Prochaska has described, and Bichat has properly noticed.

"Those fasciculi are gathered into a single trunk, which, wrapped in a sheath of pia mater, is carried along with the lesser portion of the fifth (lying then beneath it), to the sides of the posterior clinoid process, and is received in a furrow formed by the dura mater—a furrow peculiarly appropriated to this nerve, and distinct from the cavernous sinus, as Meckel has shewn, in contradiction to Vieussens and Winslow. There it forms the semilunar plexus, and acquires six times its bulk. The plexus just named is enveloped in condensed cellular tissue, called the *armilla* by Malacarne, and described by Haller as being richly provided with vessels. Hirsch has improperly called it the Gasserian ganglion, in compliment to his master. It is not a true ganglion, as is evident from the descriptions of Moscati and Malacarne: the filaments, though very closely intermixed, are by no means confused or incapable of being traced out—a task which has indeed been performed by the authors just quoted, as well as by Paletta and Wrisberg. So that, in its internal structure, it is of the nature of a plexus,—however, in its external, it may resemble a ganglion."

"*Of the Lesser Portion of the Fifth.*

"For the first exact description of the lesser portion of the fifth pair, we are indebted to the Italian, Santorini, who followed out its origin, structure, and course, with so much diligence and success, as to leave little to be added. Girardi, too, by his researches, illustrated this portion; and Wrisberg also contributed somewhat by his attentive investigations. The later authorities, Prochaska, Soemmerring, Scarpa, and Bichat, are now unanimously agreed that the fifth pair consists of two distinct portions.

"Bichat further believed that the lesser portion formed a nerve distinct from the trifacial. But Paletta taught that the

* Are these tubercles, or medullary papillæ, to be considered as the gustatory ganglia from which the nerves of taste take their origin? This was the idea excited on my first reading this passage. Mr. Alexander Walker, in quoting the same description from Bellingeri, expressed a similar hypothesis, in his elaborate work on the Nervous System, lately published.

fifth pair was threefold—namely, the common trunk of the pair, or the greater portion; the crotaphitic nerve, or that which other anatomists mean by the lesser portion; and the buccinatory nerve: both which latter nerves I include and describe under the one name of the lesser portion, because, though distinct, they hardly in any respect differ in origin, course, structure, or functions.

"The lesser portion arises by a double cord from the inmost part of the crura cerebelli: one of these cords, the larger, the upper, and the inner, has its origin in the peduncles of the cerebellum, where they insert themselves into the annular prominence, and draw near the crura of the cerebrum. It consists of five or six filaments, gathered into a single trunk; it emerges from the crura cerebelli, anterior and superior to the common trunk of the fifth; it is then carried a little beneath the latter, and goes forward on its inner side. It has no connexion with the greater portion in this passage; and it issues from the skull through the foramen ovatum, along with another bundle of the lesser portion, and with the inferior maxillary branch, in front and on the inner side of both which it has its place. The bundle just mentioned corresponds with the crotaphitic nerve of Paletta; and upon leaving the skull it is divided into three branches, presently to be described.

"But the other fasciculus or root, and that the smaller and outer of the two, arises from the inmost parts of the peduncle of the cerebellum, and towards the lobes of the cerebellum itself. It emerges from the peduncles through a common opening along with the trunk of the greater portion. The root or bundle, according to Paletta, most generally consists of eight filaments, collected into one fasciculus, which is carried forward along with the common trunk of the fifth, on its outer side and towards the middle: it leaves the skull by the foramen ovatum, situated midway (but rather towards the inner side), between the crotaphitic nerve and the inferior maxillary. It corresponds to the buccinatory nerve of Paletta.

"The difference between the lesser and greater portions of the fifth pair consists in this—that they have distinct origins, and wholly separate tracks; but above all, the lesser portion neither enters the semilunar plexus, called the Gasserian ganglion, nor is it enveloped in any manner by the armilla of Malacarne. Of this both Santorini and Girardi were well aware. It sends twigs, however, sometimes, to the plexus, as Soëmmerring notices after Girardi. There is a difference also in structure; for the filaments of which the lesser portion of the fifth is composed, are whiter, thicker, and stronger, than those of the greater portion. But the chief difference is that which Bichat points out—that the lesser portion presents the ordinary aspect of other nerves *."

After this very minute and apparently accurate description of the real origins of the fifth, and more particularly of its smaller portion, supported by many classical authorities,—nay, so much in accordance with Mr. Mayo's beautiful drawing of the origin of the cerebral nerves, published in his Outlines of Human Physiology,—it may appear not unreasonable to entertain some doubt about Sir Charles Bell's deductions, both of the similarity of the fifth to the spinal nerve, as well as the functions of the *cerebrum* and *cerebellum*, and their anterior and posterior continuations down the columns of the spinal marrow.

Mr. Alexander Shaw, taking, however, no notice of these trifles, and always ready to censure Bellingeri for the supposed faults of his anonymous reviewer, goes on stating, "The confident tone of the reviewer.....would lead us to expect the most complete coincidence in the statements of the two physiologists—that they pursued the same method in conducting their inquiries, viz., first by examining the anatomy, and then by performing experiments; and that the results of their combined observations and experiments were the same."

"The reader will find, on the contrary, in Bellingeri, (?) a direct opposition to the principle which I have stated—a totally different mode of pursuing the investigation—a signal clashing of opinions and statements with those of Sir Charles Bell; and he will

* The reader may now compare the description by Sir Charles Bell, given at p. 473 of his already-mentioned work on Anatomy, and examine the two wood-engravings, which "exhibit (as there is stated) the exact origin of the fifth pair."

inquire in vain for any single point of harmony or concurrence on which to make out a case of anticipation."

Now I may, with more confidence, cry out with him, "The public—the intelligent public—especially the medical public, will not fail to look upon these exhibitions in their true light*."

Whatever may be the result, or the opinions entertained by the learned medical profession in this country about the importance and correctness of Bellingeri's physiological doctrines on this as well as on any other subject connected with the nervous system, that is a matter which is entirely unconnected with the present question, and which I have nothing to do with. I did not write, indeed, in support of any principle laid down by my learned countryman, but only to defend him against the misrepresentations of others: this I considered a sacred duty due to truth, to my country, and to the honour of Italian physiology.

The principal objects I had in view, therefore, were to prove—

1st. That Mr. A. Shaw had not, when writing his article, read Bellingeri's Dissertatio; or, if he had read it, had not understood its contents properly; and thus has declared himself incompetent to give an opinion on such a physiological question. *He* is then to be considered "the *unlucky* foreigner, on any of whose 'assertions' we (and I fear all other persons) "must decline placing confidence."

2nd. Whatever may be Sir Charles Bell's claims, either on this or any other subject connected with the physiology of the nervous system, the 'Italian physiologist' had published, in 1818, a far more elaborate and accurate account both of the anatomy and physiology of the fifth and seventh pairs of nerves, than any published by the 'English physiologist,' from his first paper, read before the Royal Society, in July 1821, to the last one, read in May 1829: or, if Mr. A. Shaw like better, from the *unpublished tract* printed in 1811, where the fifth is yet considered as a single nerve, to the last work on the nervous system, published in 1830, which "must be supposed to present Sir Charles Bell's matured opinions on that subject."

3rd. When Bellingeri was writing his opinions in 1818, or even before, on the physiology of the fifth and seventh pairs of nerves, and by performing *experiments* in living animals, drew the first correct conclusion on the function of the seventh, he could not have derived any information from what had not yet formed a subject of examination in Sir Charles Bell's mind. Bellingeri had a nearer source of instruction and excitement for such inquiries, in the professor of anatomy to the University of Turin, the celebrated Rolando, one of the most distinguished modern inquirers into the structure of the brain, whose death, together with that of Scarpa and Paletta, Italy had lately to deplore.

4th. Although Bellingeri went through the natural intricacy of the nerves of the face from their origin to their last terminations, he deduced their functions both from anatomy and physiology, as well as from pathology, and experiments on animals, without increasing their "*pristine confusion*" by the introduction of hypothetical superadded system of nerves. Their source of action was always referred to distinct points of origin from the encephalon, and their various functions explained either by the influence of a simple or of a compound nerve.

At last, the Italian physiologist has published his opinions on the functions of the fifth and seventh pairs of cerebral nerves, as mere deductions—nay, as *more probable conjectures*, derived by his extensive researches into the history, as well as patient inquiries into the anatomy and physiology, of those two nerves, and did not proclaim them to the world as his own discoveries.

I shall, then, conclude with the following quotation, so very aptly introduced by Mr. Swan, in his article on the merits of Willis and many others, regarding the functions of nerves.

"Oro miserere laborum
Tantorum, miserere animæ non digna ferentis."

After all, it remains only for me to return my sincere thanks to the Editor, for the liberal and unrestricted manner in which my articles were allowed to be published in the pages of this respectable journal.

GAETANO NEGRI, M.D.

London, Oct. 27, 1834.

* See Mr. Shaw's article.

MEDICAL GAZETTE.

Saturday, Nov. 1, 1834.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

PROVIDENTIAL PRESERVATION OF THE MEDICAL EVIDENCE,

AND BLASTING OF THE DIABOLICAL HOPES OF THE CORRUPTIONISTS.

"He made the giants first—and then he slew them."—TOM THUMB.

NEVER was the description of the prodigies performed by the renowned personage alluded to in the above quotation, more entirely appropriate, since it was first indited, than it is to the feats of havoc and destruction enacted, in his last crusade against the "corruptionists," by our incorruptible contemporary. The fire kindled up at once certain old associations; and straightway he blazes forth in a fine strain of generous indignation. The anticipated rejoicings of imaginary persons over the supposed destruction of the evidence recently taken before Mr. Warburton's committee are given with all the fidelity which is characteristic of works of fancy, and with a minuteness that extends to the very expressions which they did *not* use! Ah! little knew they with whom they had to deal;—one who could publish their opinions before they were formed, and quote their words before they uttered them!

But we must be more explicit. Our renowned contemporary—he who makes the giants whom he slays—the great TOM THUMB of medical reform, indulges his readers with a description of the rejoicings of the "medical jobbers, schemers, and corruptionists," on the occasion of the houses of Parliament being burnt; they, the said "jobbers, schemers, and corruptionists," being first assumed to have imagined that the evidence taken before the medical committee had been reduced to ashes. This affords the writer an opportunity to burst forth in a lofty tone of patriotic indignation, mingled however with natural exultation, at the discomfiture of his opponents, who, we are told, are "exposed, defeated, and disgraced," to say nothing of their being "scouted, derided, and despised." The manner in which this great victory of liberalism over tyranny was obtained, and in which the papers were rescued from destruction, is told in language glowing in proportion to the fiery perils it depicts, wherein Othello's "hair-breadth 'scapes in the imminent deadly breach," and all his "moving accidents by flood and *fire*," are left at an immeasurable distance.

Nor would we willingly pass unnoticed the interesting but distressing fact, that some of the papers "were found next morning in the street, damming up the gutters*"!! Think of Mr. Wakley's anathemas against the "ignorant, conceited, malignant, lying, boasting, hospital surgeons," (we love to give the exact words), reduced to so degraded a situation!—To be sure, what dirty evidence it must then have been! To have been consumed in the blaze of the conflagration would have had something characteristic in it; but

"To *lie* in cold obstruction and to rot!"

and after d——ing the "corruptionists" to corrupt in "damming the gutters!!" No wonder that the bare idea should have roused him to that burst of mingled suffering and triumph which it is our fortune to record.

Much is said of the value of the documents thus preserved, and certainly they ought to be worth something, if we may judge by the many thousands of pounds which they have cost, or the

* Vide Mr. Dermott's letter in the newspapers and Lancet.

time which has been occupied in collecting them; and in serious and sober sadness we declare, that few things would have been more vexatious than their destruction. There was, however, one small difficulty in the way of the fire effecting this calamity, which our contemporary, in the heat of his argument, has overlooked—viz. that it was impossible. The greater part of the evidence, if not the whole, has been for some time in the hands of the members of the committee; nay, it had actually been printed for the use of the House; and, besides, even had neither of these events taken place, there still exists a resource in Mr. Gurney's original short-hand notes. We suppose, also, that the fire did not destroy Mr. Spottiswoode's types, and that the cost of paper and a little correction might easily have been provided, so as to damp the rejoicings of those delighters in fire, so glowingly described by our contemporary, and of whom Empedocles was but an imperfect representative.

Sir Henry Halford, we are told, displayed great and particular exultation on the subject of the fire; but it happened that Sir Henry was at his country-seat at Wistow Hall; and we can only account for this blunder by the footman with whom our contemporary communicates having been absent with his master. (We assume one of the domesties to be his correspondent, because all the *communications* about the learned baronet bear internal evidence of proceeding from some disappointed lackey.) It thus appears that Sir Henry Halford could have had little cause for "rejoicing," as, whatever time he heard of the fire, he must have been aware that it could not have burnt Mr. Spottiswoode's types, nor Mr. Gurney's notes, nor the copies of the members of the Committee, among whom was his own son, Mr. Halford. We certainly differ from the learned president in several matters touched upon in his evidence regarding the College of Physicians; but that he has the remotest wish that it should be concealed, or the slightest desire to prevent it from being doled out in sixpenny pamphlets to the readers of the Lancet, is a fantasy that exists only in the overheated brain of our contemporary—if, indeed, it be more than a mere trick to give a spur to curiosity, and push the flagging sale of what has proved a very bad speculation,—we mean Wakley's surreptitious edition of the Parliamentary Medical Evidence.

One thing, however, we gather from our contemporary's observations on the fire: it would seem to have illuminated him as to the fact, that the idea of a Royal Commission is not yet lost sight of; but the nature of his reference to the subject is such as to shew either that his information is yet worse than usual, or his habitual misrepresentation too strong to be laid aside even on the commonest occasions. He would have us believe that the lately revived idea of a Commission originated with the "corruptionists and monopolists;" whereas it came from one of the first, if not (on such points) the very first, among the ministers of the Crown; in consequence, too, of representations recently made at the seat of that University the graduates of which have been heretofore habitually designated in the Lancet by the sobriquet of Dubs; but which it now very consistently charges its opponents—and falsely charges them, with representing as "a mere grinding establishment." That a Royal Commission should become necessary would, we think, be greatly to be deplored, after all the time and trouble, and money, which have already been expended. An impression, however, was early imbibed by some leading members in both houses of Parliament, that too much party feeling was exhibited in the Committee room; and we are quite satisfied, from

what we regard as good sources of information, that should any attempt be made in conformity with the views of the "One Faculty" visionaries, it will be scouted even by the Commons; while its passing through the Peers has never been regarded as otherwise than chimerical. Meantime, from admitting every blockhead who volunteered his crude opinions to be examined, the inquiry has been protracted till all interest and curiosity about it are lost; so that, as our contemporary has ere now found to his cost, the public will not give even sixpence for the evidence. Indeed, it is quite notorious that the *public* never did care one farthing about the matter—nay, they do not even know what "medical reform" means, as any one may be convinced who will take the trouble to put the question to his next neighbour. But, on the other hand, the expense to the country has been great beyond all anticipation; so great, indeed, that it has proved no inconsiderable source of embarrassment—the amount and the ostensible cause being so utterly disproportionate.

As to our contemporary, however, we must candidly admit, that though there be a great deal of impudent invention and absurdity about his account of it, still that a fire, and, above all, a fire by some supposed to have been the work of an incendiary, should have been interesting to him, was on various grounds to be expected, and we ought not to complain that he has made the most of it. Besides, be it known that he was himself examined just before the close of the inquiry, and it must have been a great shock to his feelings to learn that the spouting in the Committee room, which followed next after his own, should have thrown so much cold water on the cause of reform, sweeping away all he had said, and anticipating its appropriate fate, by converting it prematurely to the inglorious purpose of "damming up the gutters."

LONDON UNIVERSITY HOSPITAL.

There has been a kind of exhibition of this building during the last few days, in order, we presume, to convince the public that it is actually completed. We are much opposed, as our readers well know, to the system of humbug which has prevailed to such an extent about the *University*, and to the *ad captandum* displays in which its conductors so frequently indulge. But this shall never prevent us from doing the parties justice; and as we did not think it possible that the plastering and whitewashing of the new edifice could have been accomplished in so short a space, we think it due to them to announce that it has been executed with almost incredible celerity, and that it looks very smart and comfortable. The building, though small, is well contrived, and has an operating theatre behind, which, though not yet ready, will soon be so. Whenever the requisite number of beds is filled, the hospital will no doubt be "recognized;" and it is of importance for students that this be done soon, as their attendance will not begin to count but from that date.

By the way, we wish the parties would agree about the name. The secretary, in his official announcements, calls it the "North London;" the Lancet and Dr. Elliotson denominate it the "London University" Hospital. By which cognomen is it to be permanently designated? We think the latter decidedly the better of the two.

SURGICAL REPORTS FROM THE LONDON DISPENSARY.

By R. R. Robinson, Esq.
Surgeon to that Institution.

Case I.—*Hydrocele on the left side Palliative Treatment.*

Edward May, æt. 30, admitted September 13th, was riding on horseback last January, and struck the left testis against the pummel of the saddle. No pain followed, but shortly afterwards the left side of the scrotum swelled. The swelling has since increased gradually; the left testis appears now nearly as large again as the other; surface is even; shape globular;

it is extremely hard; there is no sense of fluctuation; it is not transparent, but there is not the least pain produced upon pressure. Some degree of doubt occurred in this case: its being caused by a blow—its extreme hardness, and the total absence of yielding, or fluctuation—were in favour of enlargement of the testis. On the contrary, the total absence of pain from the first, the uniform surface, the globular shape, and the absence of fever, induced the belief that it was hydrocele, and not inflammation, or enlargement of the testis. It was accordingly punctured with care, and six ounces of clear serum evacuated. The testis was healthy, and it was recommended that the tunica vaginalis should be injected; but as he had urgent business, and was about to leave the country, that was not done.

CASE II.—*Hydrocele on both sides—Palliative Treatment*

Thomas Aldam, æt. 64, admitted July 21st; subject to dysuria occasionally; had the left tunica vaginalis tapped two years and a half ago, and a pint and a half of fluid evacuated. Both tunicæ vaginales tense, and free from pain; both tumors began at the lower part, and enlarged gradually; no hernia; pain in the back, from the weight of the tumors. They were both tapped to-day; from the right side, three-quarters of a pint, from the left a pint and a half, of straw-coloured, clear fluid, were withdrawn. The testis appears healthy, but the right rather harder than the left. The fluid collected again in each tunica vaginalis. He died some months afterwards, of malignant disease of the stomach.

CASE III.—*Inguinal Hernia and Hydrocele—Palliative Treatment.*

John M'Donald, æt. 40, admitted May 22d; the subject of pulmonary disease many years, and inguinal hernia on the left side, which is easily reducible, and does not proceed below the left groin; the left tunica vaginalis much larger than the other, forming a globular smooth tumor, with a sense of fluctuation, evidently a hydrocele, as it has been tapped several times. A trochar was introduced, and 16 oz. of straw-coloured serum withdrawn.

CASE IV.—*Inguinal Hernia on both sides—Hydrocele on the right—Palliative Treatment.*

Isaac Carlier, æt. 70, admitted December 31st. First perceived a rupture in the right inguinal region 30 years ago; two years afterwards, a rupture occurred also in the left side; both have been kept up tolerable well by a double-headed truss. About nine or ten years ago, he perceived a swelling at the lower part of the right testis, which gradually increased, but was entirely free from pain. About three weeks ago, he first felt a dragging sensation in the loins, which continues. Right tunica vaginalis is much distended and elastic, apparently from fluid within it. The hernia on this side descends, upon coughing, into the inguinal canal, but not otherwise; the opening is large, and the return easy. Over the upper part of the left tunica vaginalis, there is a large soft swelling, like omentum; which, upon pressure (which produces slight uneasiness), can be made to proceed towards the external abdominal ring, but does not altogether disappear. The testis cannot be distinctly felt on this side. He is very feeble, and has had dyspnœa and cough for some years. The right tunica vaginalis was punctured, and a pint of green, clear, albuminous fluid was withdrawn; when the dragging in the back was immediately relieved. As he was much out of health, the tunica vaginalis hardened, and the right testis a little enlarged, a radical cure was not attempted.

CASE V.—*Large Hydrocele of five years' standing—Slight tenderness of the left Testis—Palliative Treatment—Fluid slowly re-accumulated.*

Joseph Nelson, æt. 55, admitted April 17th. A healthy man; has had a swelling of the testis on the left side five years, which began at the lower part, and increased gradually, without any pain. There is now a very large smooth globular tumor on the left side of the scrotum, which obliterates the penis; is very heavy, and elastic. A trochar introduced gave exit to two pints of clear, high-coloured, albuminous serum. Tunica vaginalis not thickened; testis rather small, soft, and slightly tender when pressed, which, he says, has been the case many years.

May 19th.—Quite easy, except when the testis is pressed; no fluid detected in the tunica vaginalis.

August 28th.—Left tunica vaginalis rather larger; no pain, but there appears to be a slight return of fluid.

Sept. 29th.—Left tunica vaginalis decidedly more enlarged, and now clearly contains a fluid; which, however, appears to re-accumulate slowly.

CASE VI.—*Hydrocele of long standing—Gonorrhœa—Inflammation of the Testis—Palliative and Antiphlogistic Treatment radical.*

J. H., æt. 46, admitted September 8th, 1832, has had enlargement of the left side of the scrotum from youth, which never gave him any uneasiness, not even when as

a sailor he scaled the ladder on board a ship. Had spurious connexion when drunk, a month ago; about a week afterwards, he perceived a purulent discharge from the urethra, which has entirely ceased the last few days. He got wet through on the 4th and 5th instant, after which he experieneed pain and increased swelling of the left testis; for which 24 leeches have been at three separate times applied, and mercury given, with considerable relief. Mouth not yet sore; many enlarged and varicose veins on the scrotum, which is rather flaccid. Left testis much longer than the other; enlarged, indurated, and weighty; painful when dependent, or pressed—easy when supported and untouched. There is also evidently a considerable quantity of fluid anterior to the testis; rigors when the swelling of the testis first increased, but none since; no fever; bowels costive.

Lot. Plumb. Cal. gr. iij. Opii, gr. ½, n. et m. Mist. Cath. Ant. bis die. Hirudines rep.

September 14th.—Pain nearly gone; testis softer and smaller; slight return of gonorrhœa the last few days.

Rep. Lot. et Mist. Pil. Hydr. gr. iij. o. n.

October 3d.—Gonorrhœa increased the last week; testis of late more painful, notwithstanding leeches have been several times applied, and the mercury continued. I this day punctured the tunica vaginalis anteriorly, and gave exit to about a pint of serous fluid of brown colour, and coagulable by heat; *no flakes of lymph;* testis was felt posteriorly; was not much enlarged, but was very tender to the touch.

Rep. Hirud. Cal. gr. iij. Opii, gr. j. n. et m.

7th.—Mouth very sore; pain in the testis entirely gone; not tender to the touch; softer; discharge from the urethra nearly ceased; epididymis enlarged and hard.

17th.—Discharge from the urethra again copious; posterior part of the testis still hard; no fresh accumulation of fluid.

Mr. Scott's mercurial dressing applied to the scrotum.

22d.—Gets up daily; much easier; epididymis much smaller; thickening scarcely perceptible; copious discharge from the urethra.

Liq. Postass. Bals. Copaibæ, a. ℥ss. ter die.

November 2d.—Discharge nearly gone; testis quite easy, except when it wants dressing, which is about every four days; not much harder or larger than the other; walks about well.

March 4th, 1833.—I saw him to-day; testis its natural size. Tunica vaginalis thickened, but devoid of fluid. Gonorrhœa continued on and off until a month ago; since which he has been entirely free from it.

Case VII.—*Hydrocele on the right side, injected with wine and water—Radically cured.*

Henry Stone, æt. 68, admitted October 29th; the subject of hydrocele twelve months; was tapped six months ago. There was a rather small, smooth, globular tumor on the right side of the scrotum, entirely devoid of pain, which was punctured, and eight ounces of clear straw-coloured fluid, readily coagulable by heat, withdrawn. The tunica vaginalis seeming healthy, and the testis not enlarged, about the same quantity of wine and water, in the proportion of two-thirds of the former to one of the latter, was injected, and allowed to remain five minutes: it produced only trifling pain, which extended towards the groin; and on its removal the scrotum became much corrugated.

P. P. ℈j. Lot. Plumb. Support.

October 31st.—Some pain in the groin; scrotum tender to the touch; no fever.

November 12th.—No pain; tumor as large and as tense as before the operation.

P. P. ℈j. Ung. Hyd. fort.

26th.—Tumor continues free from pain: it is certainly diminished in size, and less tense.

Rep. Ung.

I have seen him lately: the fluid was all absorbed, and did not return; the testis is the same, both in size and feel, as the other, and the cure is perfect.

Case VIII.—*Hydrocele on the right side, injected with a solution of Sulphate of Zinc—Much Inflammation of the Testis—Cure radical.*

Richard Kingwell, æt. 63, admitted the 13th of December, with a hydrocele of the right tunica vaginalis; it had been forming for two years and a half, and had been tapped twelve months ago. Upon introducing the trochar, ℥xij. of fluid were withdrawn, the testis and its coats appearing healthy; a solution of sulphate of zinc (℥ss. to eight ounces of water), was injected, and retained for five minutes; some pain, especially about the back, supervened, and syncope. On the following day, the pain in the back had greatly increased; the testis was hard, exceedingly tender to the touch, and evidently inflamed. The veins of the scrotum were opened, and a good deal of blood removed; he was kept in bed, a cold lotion applied, and mercury taken to affect his mouth, under which the inflammation of the testis entirely subsided; no fresh collection of fluid ensued; and on the 7th January he was discharged cured. I have

seen him since, some time after the operation, and there was then no fresh accumulation.

CASE IX.—*Hydrocele treated radically by the injection of Lime-water.*

James Donald, æt. 70, the subject of asthma, admitted March 22d. Has had a hydrocele forming on the right side some years, which was punctured about thirteen months ago, but, as the trochar was being withdrawn, he flinched, and brought the canula out also; about ℥ij. of clean serum escaped, and a little passed into the cellular substance of the scrotum. To-day the hydrocele was punctured again; ℥vij. of straw-coloured fluid were withdrawn, and the same quantity of lime-water injected, and retained for five minutes: it produced some smarting, faintness, and corrugation of the scrotum.

March 23d.—Tumor very painful throughout yesterday afternoon, entirely free from pain to-day, but nearly, if not quite, as large as before the operation.

April 22d.—Tumor certainly smaller, but still containing a good deal of fluid; entirely devoid of pain.

August 18th.—He called on me to-day; the fluid is entirely absorbed, and has been so for some time; the testis is quite healthy, and there is no vestige of disease.

CASE X.—*Hydrocele on the left side—Lime-water injection—Disease of the Testis on the right side.*

John Berry, æt. 25, admitted March 7th, a thin, feeble, sallow man (naturally), perceived a swelling on the left side of the scrotum twelve months ago, which commenced below, and never gave him pain till it was weighty; it was tapped ten months ago; a clear fluid was discharged, and it soon filled again. The scrotum is now the seat of two distinct swellings, one on each side of the raphe. On the left side the tumor is large, soft, devoid of feeling, fluctuating, and, by a candle, diaphanous; on the right, pyriform, smaller, hard, though smooth on the surface, and rather painful, especially on pressure over the cord; not diaphanous; and slight cough and dyspnœa. Lungs, upon auscultation, sonorous, and apparently healthy.

Linctus; Pil. Scillæ, g. ij.; Pil. Hydr. g. iij. n. et m. Vesic, sterno.

March 12th.—Cough much diminished; looks better; no fever. Left tunica vaginalis punctured; 10 oz. of straw-coloured fluid removed; testis small, and healthy. Eight oz. of lime-water were injected, and allowed to remain six minutes; it produced no pain, but a slight degree of faintness.

13th.—Scrotum again a good deal distended with fluid; a sharp pain in the hips and loins a few hours after the operation, but that is gone off.

20th.—Left side of the scrotum much less again; no pain here, but a good deal of pain on the opposite side, especially about the cord; health somewhat improved.

Magn. Sulph. ℥ss. ex Inf. Gent. C. ℥iss. ter die; Lot. Plumb.; and support.

April 4th.—Tumor on the right side still painful and large; left side still furthur diminished in size. Right side dressed in Mr. Scott's way.

Dec. Cinch. c. Tr. Iodinæ, ♏. v. ter die.

The scrotum was twice dressed in the same way, at a week's interval; the pain went away, and the tumor on the right side was certainly diminished; but after this he never applied again. I think it is not improbable that the disease of the lungs, under which he certainly laboured, (for I suspected phthisis at the time), advanced and destroyed him.

REMARKS.—The preceding cases will, I trust, prove interesting to your junior readers, as they illustrate some of the obscurities and combinations of hydrocele, and the varieties which, in its treatment, it is necessary to adopt.

In the first case is seen some obscurity in the diagnosis; the tumor having been produced by a blow, its extreme hardness, and the total absence of yielding or fluctuation, at first induced me to think the disease enlargement of the testis, resulting from chronic inflammation; on the contrary, the total absence of pain from the commencement, the uniform and even surface of the tumor, its globular shape, and the absence of fever, were much in favour of hydrocele, under which impression the tumor was carefully punctured, and its nature at once ascertained.

In the second case, a hydrocele formed on both sides, and here there was little or no obscurity; for there was no appearance of hernia—the rings were closed—the tumors began to form *slowly*, commenced at the *lower* part, and never disappeared after they had first formed. The even surface of the tumors, the absence of pain, except in the back, which was evidently owing to their weight and dragging,—both being nearly of the same size, both very considerably larger than natural, and fluid, to a great amount, having been previously removed from the left side by tapping,—at once pointed out the nature of the case.

In the third case, the combination of hydrocele with hernia was seen; but the

two diseases were so separate and distinctly marked, that no mistake could be made. The hernia was small, did not descend beyond the groin, and was easily returned. The lower tumor had been previously tapped, and fluid removed from it.

In the fourth case is seen a hydrocele on the right side, and an hernia in both groins; but, as in the preceding case, there was no difficulty in forming a correct diagnosis.

The fifth case is interesting, from the very slow return of the fluid after its removal. Four months after the operation, no fluid was detectable; and it might then have been fairly reported as an example of the palliative plan being radical. It shows now, however, the necessity of being cautious, and taking time, that we may not form an erroneous opinion.

The sixth case shows the very common combination of gonorrhœa and inflammation of the testicle; the latter was apparently brought on, partly by the suppression of the purulent discharge, and partly by exposure for two successive days to cold and wet. This is peculiar as well as interesting, from there having existed for years a collection of fluid in the vaginal coat of the testis, which was inflamed, and from the palliative treatment proving radical. The inflammation being a different and more powerful action than the mere serous exhalation, appears to have stopped that, and to have led to the effusion of coagulable lymph, by which the vaginal coat was partially or completely glued to the testis. The thickening of the tunica vaginalis, and the effusion of coagulable lymph, is sometimes very considerable. I have in my possession a preparation, in which, from inflammation, the vaginal coat covering the testis is fully a quarter of an inch thick from intestinal deposition, and the whole membrane is lined with a thick and beautifully vascular false membrane: this inflammation and its effects were produced by the injection of undiluted port wine.

The four last cases give us an opportunity of comparing the effects of different injections. In Case 7, port wine and water were used, in the proportion of two-thirds of the former to one-third of the latter. Eight ounces of this were injected, and allowed to remain five minutes; the patient's age was 68. It was productive of very little pain. Effusion again occurred in a few days, but it was all absorbed again in the course of a few months.

In the eighth case the man's age was 63. Eight ounces of a solution of sulphate of zinc (in the proportion of a drachm to a pint) were employed as the injection, and allowed, as in the preceding case, to remain five minutes. Some pain, especially in the loins, and syncope, immediately followed, and severe inflammation of the testis subsequently ensued, requiring rest, scarification of the scrotal veins, and mercury for its removal. There was, however, no return of effusion.

In Cases 9 and 10 I employed lime-water, in consequence of my friend, Mr. Curling, having mentioned that it had been successfully used in these cases. In one the man's age was 70; the quantity injected half a pint; the time it was allowed to remain five minutes. It produced some smarting, faintness, and corrugation of the scrotum. On the following day the effusion was nearly, if not quite, as extensive as before the operation, but there was no pain or other inconvenience; in a month it had decidedly decreased, and in less than five all vestige of fluid had disappeared.

In the other case the patient's age was 25. The same quantity of fluid was used, and it was allowed to remain six minutes. On the following day the accumulation was nearly as great as before the puncture, but there was no uneasiness, though a sharp pain in the loins and hips was experienced a few hours after the operation.

As this man was much out of health, I was perhaps scarcely justified in resorting to the radical cure; but the patient had been much annoyed by the weight of the tumor, had had the fluid removed once before, was very anxious to get rid of his complaint altogether, and had materially improved in his general appearance under the means employed. I therefore ventured to try the lime water, as it did not seem likely to produce excessive irritation. That I might prevent this as much as possible, I kept him in bed, and fortunately no ill effects followed. I think from the rapid re-appearance of the fluid, and its subsequent diminution, that the whole would in time have disappeared. I regret, however, that I have nothing but conjecture to offer upon this point.

In the last case there also existed disease (I believe scrofulous inflammation) of the testis on the side opposite to the hydrocele, and afforded a good opportunity of contrasting the symptoms of each. On the hydrocele side the swelling had gradually formed, had commenced below; was large, soft, fluctuating, diaphanous, and devoid of pain. On the side where the testicle was diseased, the tumor was smaller, more rapid in its formation, hard, inelastic, not diaphanous, and very painful, especially on pressure.

In these ten cases, it will be observed that the hydrocele occurred in *four* instances on the *right*, in *five* on the *left*, and in one instance on both sides.

ST. GEORGE'S HOSPITAL.

CASES REPORTED BY A PUPIL.

CASE I.—*Rheumatism of the Heart, with Paralysis.*

ANN REDMAN, æt. 37, admitted Sept. 17th. Has been ill for the last four months from repeated attacks of acute rheumatism. The complaint shifts from one part to another. On admission, the hands and fore-arms were red, swollen, and very painful; but warmth appeared to afford her relief. There was pain in the chest, laborious inspiration, and an irregular and considerably increased action of the heart and great vessels, which was communicated to the jugular veins. Pulse 100; tongue white. She was ordered to be immediately bled, and to take

Cal. gr. iij.; Opii, gr. j. M. sum. t. d. formâ pil.; Haust. Sennæ, quotidie mane.—Fever diet.

Sept. 20th.—Rheumatism of limbs much better; pain in chest much relieved; can breathe and lie down without difficulty; pulse 120, irregular and intermitting.

25th.—Rheumatism and pain in chest entirely gone; mouth affected by the mercury; countenance very pale; pulse still weak and intermitting.

Omit. Med.; utatur. Gargar. aluminis.

26th.—Was attacked yesterday afternoon with sudden difficulty of breathing, which was very shortly followed by complete paralysis of the right side. Suffers pain in the region of the heart; inspires with great difficulty; lies motionless, with a cold sweat bedewing her skin, and is scarcely capable of replying to the questions put to her. Was bled immediately after the paralytic fit; blood not buffed nor cupped.

℞ Sp. Æth. Sulph. ʒss.; Ammon. Subcarb. gr. iij.; Mist. Camph. ʒiss. M. sum. 4tis horis.

28th.—Died at one o'clock P.M.

Sectio cadaveris.—The pericardium was so firmly adherent to the heart, that it could not be detached from it. The heart was of the ordinary size; but when cut into, its substance was found much softer than natural: its valves were healthy.

The brain was carefully examined; but, with the exception of a more than usual emptiness of the meningeal veins, no remarkable appearance whatever was discovered.

REMARKS.—This case, at the commencement, presented nothing remarkable. There was simply acute rheumatism of the upper extremities flying about from part to part; and at length, as frequently happens, more especially in this kind of shifting rheumatism, the disorder was transferred to the heart. The usual remedies—bleeding, with frequent doses of calomel and opium, and opening medicine, sufficed to relieve the patient. With the exception of an intermitting pulse, every thing was going on well, when suddenly she was struck with paralysis.

It became immediately a matter of speculation among my fellow pupils to account for this fatal superaddition to the patient's complaint. It was attributed by some to an increased impetus given to the blood by the efforts of the heart to make up by force what it wanted in freedom of action; which the vessels of the brain being unprepared for, or not in a condition to withstand, rupture and apoplexy followed. Others were disposed to assume that some degree or kind of inflammatory action had arisen in the substance of the heart itself, weakening its power of transmitting to the various organs their required supply of blood, and thus interrupting, as one effect, the circulation of the brain.

The post-mortem appearances would seem to favour the latter explanation. The heart was found softened, and the brain appeared drained of its blood. A physician of eminence, Dr. Farre, regards this softened condition of the heart, by which its muscular power is enfeebled, as the effect of inflammation of its substance; and that palsy may depend upon an insufficient supply of blood being sent to the brain, will, I suppose, scarcely be doubted. Why the paralysis should have been confined to one side, affords matter for further speculation.

CASE II.—*Intermittent Lumbago cured by Quina.*

John Harding, æt. 49, admitted August 20th.—Has been in the habit, from the nature of his occupations, of being subjected to sudden changes of temperature. About six months ago, first felt some stiffness across the small of the back; at the end of three weeks this amounted to severe pain, forbidding motion, and confining him to the recumbent posture. His suffering was always more severe at night. This state of things had continued up to the period of his admission, on which occasion a careful examination was made of the parts affected, but no preternatural appearance whatever could be detected about the seat of pain. Tongue clean; pulse 100, weak; skin not hot; urine clear—does not coagulate by heat or acids.

℞ Vin. Colch. ℥ss.; Mist. Camph. ℥ij. M. Ft. Haust. bis die s.; Opii, gr. j. o. n.; Ol. Ricini, ℥ss. p. r. n.

August 25th.—No relief.

Haust. Cinchonæ, ℥iss.; Tr. Guaiaci. Ammon. ℥j. M. Ft. Haust. t. d. s. Omit Colchicum.

29th.—No relief.

Empl. Bellad. part affect.

Sept. 1st.—No relief.

Ext. Conii, gr. iv. t. d. Omit alia.

5th.—No relief.

Empl. Lyttæ Lumbis.

11th.—No relief.

℞ Veratriæ, ℈j.; Adipis. pp. ℥j. M. Ft. Ung.; Infric. ℥j. mane et vesp.

18th.—Has suffered less since he began the use of the ointment. The pain comes on in paroxysms, and lasts from ten o'clock at night till four in the morning; it then entirely leaves him.

℞ Quin. Sulph. gr. iij.; Acid. Sulph. dilut. ♏x.; Aq. Distillatæ, ℥x.; Tr. Card. ℥j. M. Ft. Haust. 3tis hs. sumend.

20th.—Greatly relieved.

27th.—Quite free from pain; sleeps well; and is much improved in health.

Remarks.—Those who are in the habit of attending the practice of hospitals, will have experienced the difficulty frequently met with, of getting from patients, on their admission, an intelligible account of the ailments for which they make application for relief. The above was a case in point. It was not made out till Harding had been some time in the hospital, that the pain observed stated periods of attack and subsidence—partook, in short, of an intermittent character. As soon as this was observed, the specific power of quinine in intermittent disorders was called in aid, and soon produced a complete removal of the affection.

The colchicum and guaiacum were given under the impression that the pain was of a rheumatic nature; but the perfect inefficiency of those medicines to produce alteration of any kind in the patient's condition, soon induced the physician to have recourse to others. The veratria alone, before the quina was prescribed, seemed capable of exercising any influence over the malady; but when the true character of the affection became obvious, the sulphate of quinine was employed, and with the success above recorded.

GUY'S HOSPITAL.

Operation of Tying the Femoral Artery.

The operation of tying the femoral artery, for the cure of popliteal aneurism, was performed at this hospital, by Mr. Bransby Cooper, on Tuesday morning last. The patient was a middle-aged man, and was admitted into the hospital but a few days back: the disease had existed about three months. The case, before the operation, had every favourable appearance, but some little difficulty had to be encountered during the performance of it. The limb was rather œdematous, from the pressure produced by the disease. The operation was commenced in the usual manner. On dissecting down to the sheath, an arterial branch of some considerable size was divided, and bled sufficiently to require a ligature: this Mr. Cooper believed to be a large muscular branch, passing to supply the sartorius. The sheath was readily exposed, which, when opened, brought into view the artery; but owing to the size of it being much less than usual, the operator hesitated before he passed the ligature around it, and requested Mr. Callaway, who was near, to convince himself that it was the right trunk. It was then secured, and the wound drawn together with adhesive plaister. When this patient had been removed, his place was quickly filled by an elderly man, who had to submit to amputation of the leg, for disease of the foot. This operation was performed by Mr. Morgan, with his usual neatness and quickness, for which he stands so particularly pre-eminent. The circular opening was practised, but some little trouble and time were required before the vessels could be secured.

The theatre was unusually crowded; many pupils were obliged to leave without being enabled to obtain a glimpse of the operations: indeed, the inconvenience arising from the smallness of the place was at this time particularly evident. How the governors of an institution so charitable and wealthy, can suffer the present small theatre to remain, is, indeed, a mystery.

A Pupil.

ON CERTAIN MENTAL ILLUSIONS.

In a memoir read by M. Esquirol before the Institute, in October, 1832, the learned author endeavoured to establish the distinction between mental hallucinations and mental illusions: the former are the mere offspring of the disturbed mind, arising without any evident cause, and re-

ferable to no distinct operation preceding them; whereas the latter are the results of certain impressions made upon the body, but the nature of which impressions the insane strangely mistakes and perverts: the former are altogether mental phenomena; the latter are mental indeed, but generated from and depending upon previous corporeal influences. These corporeal influences are very generally painful sensations, either on the more immediate organs of sense, or on some of the viscera contained within the great cavities. A few examples will readily indicate that set of cases which Esquirol denominates "illusions."

Illusions depending upon a Disturbance of the Organic Sensibility of the Encephalon.

Case I.—A young lady, 18 years of age, having for some time suffered from a severe pain on the crown of the head, at length insisted that there was a worm within her head devouring her brain. No reasoning could disabuse her mind of this illusion; and she was convinced that the only method of relieving her was the extraction of the worm. An incision was accordingly made through the scalp, and a portion of fibrine was drawn out, with much ceremony, as if to corroborate the truth of her prediction. She was satisfied, and expressed great pleasure. The wound was kept open for two or three months, by which time not only all the pain, but the mental illusion as well, had entirely subsided.

Case II.—A country woman was admitted into the Salpetrière, in consequence of intense pain at the top of the head, which she attributed to the presence of some animal concealed under the skin. An incision was made through the scalp at the pained spot, and a portion of an earthworm was then shewn to the patient, as if it had been extracted from the wound. She testified great joy at the time, being assured, she said, of her speedy recovery; but the hope of this fortunate event was soon baffled, for, in a fit of rage, she tore open the issue which had been established at the wound, and the mind became as unhinged as ever.

Case III.—A lady, 30 years of age, who had fallen into a state of hypochondriasis, after suffering great mental distress, was impressed with the idea that her brain had become petrified. Some time after, she thought that it had softened, and was in a fluid state. On the dissection of this patient, a scrofulous deposit was found in the anterior lobe of the cerebrum.

Illusions depending upon a Disturbance of the Organic Sensibility of the Abdominal Viscera.

Case I.—Ambrose Parè mentions the case of a hypochondriac, who believed that he had some frogs in his stomach, and who was cured by a smart purgative or two, the attendants having cunningly introduced a frog or two into the night-stool before the patient went to it.

Case II.—M. Esquirol examined the body of a woman who had died at the Salpetrière; she had believed that some cruel animal was in her stomach. This viscus, at its pylorie orifice, was found cancerous.

Case III.—In 1832, there was a woman in the Salpetrière, who suffered from repeated attacks of severe colic. Her own idea was, that a regiment of soldiers lay concealed in her belly, and that she could feel them struggling and fighting with each other. Dissection shewed that a chronic peritonitis had existed for a length of time, and had glued large portions of the intestines together.

Case IV.—A woman, 57 years of age, of a strong and sanguineous temperament, and so extremely devout and religious in her way, that she was styled by her keepers "la mère de l'église," because she was constantly talking of some scriptural subjects, was impressed with the belief that all the apostles and evangelists had taken up their residence within her bowels; moreover, that the Pope held his conclave there; and that, occasionally, even some of the Patriarchs of the Old Testament sojourned with his holiness. On examining the abdominal viscera of this woman after death, it was discovered that all the intestines had become agglutinated together, in consequence of chronic peritonitis.

Case V.—Similar morbid appearances were found in the abdomen of a lunatic, who believed that a devil had taken up his abode in his stomach to torture him. In this case the skin, over almost every part of the body, was singularly insensible to mechanical injury; it might be pricked, pinched, and cut, without the patient appearing to suffer any pain.

Illusions depending upon a Disturbance of the Sensibility of the Generative Organs.

A woman, well advanced in years, was haunted with the idea that the devil had crept into her womb, and that nothing could dislodge him from his dark abode. This woman died, and it was found on dissection that there were several hydatids on the external surface of the uterus.

In another case, in which the patient believed that some venomous animal had entered her womb, and was accordingly in the habit of pushing pieces of meat up her vagina to entice it down, a similar disease was found affecting the uterus.

Such are a few examples illustrative of delusions which appear to take their origin from corporeal impressions, acting upon a disturbed mind. We mean not to enter into any investigation of this most abstruse subject: our only motive has been to afford some authentic data to the inquirer*.

COLLEGE OF SURGEONS.

The subjoined notices have just been issued: we hasten to insert them, for the benefit of those to whom they apply.

NOTICE TO HOSPITAL SURGEONS.

Royal College of Surgeons in London, 28th Oct. 1834.

In order to verify the certificates presented by candidates for the Diploma of the College,—

The surgeons of all recognised hospitals are requested to transmit to the secretary, on the 1st of November, the 1st of February, the 1st of May, and the 1st of August in each year, or as soon after as possible, a quarterly return of the students attending the same, noting the dates of entry, and the periods for which they have entered, together with any remarks as to attendance, absence, &c., according to the form, herewith enclosed, and which will be furnished by the College on application to the secretary.

Edmund Belfour, *Sec.*

A notice to the same effect as the preceding has been issued to Lecturers.

NOTICE TO SURGICAL STUDENTS.

Royal College of Surgeons in London, 28th Oct. 1834.

It is expected by the Council of the College, that the following regulation be attended to by all students coming to London for any part of their education, and with the ulterior view of becoming candidates for the Diploma of the College.

Regulation.—Every student, on the commencement of his education in London, is desired to present himself at the College, to register his name, together with the documents of his previous studies; at which time he will be required to produce evidence, satisfactory to the Court of Examiners, of having entered to those studies which are necessary for the completion of his education; and credit will be given for attendance on hospital practice or lectures in London, only from the date of such registry.

Edmund Belfour, *Sec.*

* Journ. Hebdomadaire, and Med.-Chir. Rev.

SIR JAMES EYRE.

On Thursday last, Sir James Eyre, of Margaret-Street, Cavendish Square, was elected one of the accoucheurs to the St. George's and St. James's General Dispensary, in the room of Dr. Chowne, resigned.

APOTHECARIES' HALL.

Names of Gentlemen to whom the Court of Examiners granted Certificates of Qualification on Thursday, the 30th of October, 1834.

George Henry Perritt, London.
Frederick Beverly Dixon, Norwich.
John Stileman Bostock, Steyning.
Samuel Davie, Ipswich.
Thomas Lucas, Soham.
John Brookes Williams, Tetbury.
William Henry Smith, Kennington.
Richard Francis Salton, Steyning.
William Russell Dalton, Ipswich.
William Alexander Anderson, London.
Emanuel Baker, London.
John Currie, Bungay.

WEEKLY ACCOUNT of BURIALS,

From Bills of Mortality, *Oct.* 28, 1834.

Abscess	3	Hæmorrhage	1
Age and Debility	30	Hooping-Cough	8
Apoplexy	11	Hydrophobia	1
Asthma	8	Indigestion	1
Cancer	1	Inflammation	16
Childbirth	2	Bowels & Stomach	4
Cholera	2	Lungs and Pleura	5
Consumption	37	Insanity	1
Convulsions	25	Jaundice	1
Croup	3	Liver, diseased	5
Dentition or Teething	5	Measles	2
Diarrhœa	1	Mortification	3
Dropsy	12	Paralysis	5
Dropsy on the Brain	9	Small-Pox	3
Fever	5	Thrush	2
Fever, Scarlet	14	Unknown Causes	2
Fever, Typhus	2		
Gout	1	Stillborn	19

Decrease of Burials, as compared with the preceding week . . . 565

METEOROLOGICAL JOURNAL.

Kept at Edmonton, *Latitude* 51° 37′ 32″ *N. Longitude* 0° 3′ 51″ W. *of Greenwich.*

Oct. 1834.	Thermometer.		Barometer.	
Thursday . 23	from 51	to 58	29·56	to 29·61
Friday . . 24	32	50	29·65	29·80
Saturday . 25	37	55	30·00	30·14
Sunday . . 26	38	50	30·19	30·24
Monday . . 27	35	53	30·30	30·34
Tuesday . . 28	39	57	30·40	30·46
Wednesday 29	46	51	30·53	30·54

Prevailing wind, N.W.

Except the 24th and 25th, generally cloudy; rain at times on the 23d, and in the evening of the 28th.

Rain fallen, ·075 of an inch.

Charles Henry Adams.

W. Wilson, Printer, 57, Skinner-Street, London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, NOVEMBER 8, 1834.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture VI.

DISEASES OF THE LUNGS.

Having thus, gentlemen, completed the theory of the signs, we now proceed to the second section of this part of the course, or to the *diseases of the lungs.*

As I stated in the introductory lecture, I shall classify these diseases in an anatomical order; and as the respiratory organs consist of a trachea and its ramifications; of an accumulation of air-cells, constituting their proper substance, or parenchyma; and finally, of a fine serous investing membrane, called the pleura; so we shall successively describe their affections under the heads of, 1st, diseases of the trachea and bronchial tubes; 2d, diseases of the parenchymatous tissue; and 3d, diseases of the pleura. We follow here the arrangement of Laennec, which is simple and easily understood.

In speaking of each particular disease, we shall proceed invariably in the following order:—We commence with its morbid anatomy, constantly illustrating that part by preparations and drawings: there is a great advantage in this mode of proceeding, for you will at once become acquainted with the lesion of structure which really constitutes the disease, and you will soon find that the symptoms will thereby be easily understood, and even frequently anticipated. I know that this is not the ordinary method of teaching medicine, but that the morbid anatomy, if described at all, is generally so, after the symptoms have been mentioned; but I have found from a tolerably long experience, both in my own studies, and in instructing others, that the plan I propose is most advantageous; indeed, it is impossible to understand the local signs of pulmonary and cardiac diseases without being previously acquainted with the organic lesions which occasion them.

After describing the morbid anatomy of the particular disease, we shall then proceed to the signs by which the alterations of structure are rendered evident to our senses; by shewing, 1st, the *functional signs*, or the signs afforded by the more or less altered state of the functions which the lungs perform. 2d. The *local signs*, or those which arise from a local examination of the organ. 3d. The *general signs*, or the signs which arise from changes of structure or function of one or more of the rest of the organs of the body, in consequence of the disease of the lungs.

We shall then consider the *causes*, dividing them into two classes; the first relating to the *individual*, as age, sex, temperament, idiosyncrasy, &c.; and the second, causes *external* to the individual, and acting upon him, as cold, moisture, miasmata, contagion, &c. I shall say but little upon what has been called the *proximate cause*, as that is a subject purely speculative, and we shall have but too little time as it is to describe well-authenticated facts, without entering into vague and useless hypotheses. We shall conclude the subject by pointing out the various indications of *treatment.*

DISEASES OF THE AERIAN PASSAGES.

You are aware, gentlemen, that the aerian passages are lined by a mucous membrane, and it is particularly to the state of this membrane that we must direct almost all your attention: we shall first consider its inflammation; 2dly, the dilatation of the bronchial tubes,—a disease first de-

scribed by Laennec; 3dly, hæmorrhage from the bronchial tubes; and finally, bronchial polypi.

Inflammation of the Mucous Membrane of the Air-Passages.

Inflammation of the mucous membrane of the air-passages has been divided into species, from the nature of its results: thus, there may result a secretion, which does not concrete after its formation: to this the term *catarrh* is applied. There may result a secretion which instantly concretes as it exudes, and moulds itself to the form of the part affected: this is called by Laennec *plastic inflammation*, or more commonly *croup*. Another consequence may be *ulceration* of the membrane.

Catarrhal inflammation, or that in which the inflammation produces a secretion which does not concrete, is again subdivided, principally according to the colour of that secretion: thus, it may be yellow; in that case it is called *mucous catarrh*; or it may be transparent and viscous; it is then known under the appellation of *pituitous catarrh*: each of these exists in the acute or chronic form. *Pertussis*, or whooping cough, may be considered as a variety of the latter species, at least as far as relates to the nature of the secretion. The secretion sometimes assumes a rounded and firm appearance, something like a pearl: this is named by Laennec *dry catarrh*, not because there is no secretion, but because there is infinitely less than in the preceding species. The *suffocative catarrh* of authors is not a distinct species, but only an excessive degree of the mucous or pituitous forms, often combined with œdema or emphysema of the lungs, and occasionally with peripneumonia.

I place before you this tabular view, which I hope will render the subject clearer.

TABLE.

- Diseases of the Aerian Passages.
  - 1. Inflammation of the mucous membrane ..
    - Catarrh ..
      - Mucous .. Acute. / Chronic.
      - Pituitous — Acute / Chronic — Variety—Pertussis.
      - Dry.
      - Suffocative.
    - Plastic, or Croup.
    - Ulcerous.
  - 2.—Dilatation of the bronchial tubes.
  - 3.—Bronchial hæmorrhage.
  - 4.—Polypus of the bronchi.

Catarrh is the most common disease of this climate; perhaps there is not a single individual who has not been affected at one time or other with it, and I may say still more, that perhaps not a year passes but every one is more or less troubled with this affection, and particularly in the dry form. There is scarcely an individual, though he may appear to be in a good state of health, in whom, if you apply the ear to the chest, you will not find some ronchus, some wheezing, especially in moist weather.

Mucous Catarrh.

Definition.—Inflammation of the mucous membrane, having for its result a yellow secretion which does not concrete.

Morbid Anatomy.—It fortunately happens, that although this disease is so frequent, yet it is very rarely fatal, and we have therefore few opportunities of seeing the morbid condition of the membrane. However, we can readily form an idea of it from the state in which we perceive the Schneiderian membrane at the nostrils, when inflamed; and, by describing that state, which all of you have witnessed, and perhaps most have felt, you will easily understand the condition of the aerian mucous membrane wherever it may be affected. In the first place, the part is red: there is a general blush upon its surface, upon which dilated blood-vessels ramify in an aborescent form. The membrane swells, and is evidently thicker and firmer than natural. In the first instance, it is perfectly dry; soon, however, a secretion commences, which is at first exceedingly acrid, saline, transparent, and thin. It excoriates all the parts with which it comes in contact, as the alæ of the nose, the lips, &c. After flowing for a certain time, varying from a few hours to a day or two, according to the intensity of the disease, it changes in its properties, loses its acrid nature, becomes more bland, but still remains transparent. In an indefinite time, say two or three days, still farther changes take place: its bland character remains, but its colour is altered: it gradually assumes a greenish tint; it then passes to yellow, and finally becomes of a bright brimstone hue. The membrane also changes as the

disease proceeds; for, as the bland fluid is formed, whether it be of a white or yellow kind, the membrane diminishes in thickness and firmness. The inflammation diminishes as the secretion increases. This is the general morbid condition of the aerian passages; particular modifications we shall speak of previous to describing the signs of each species.

Symptoms; functional.—You are of course aware, gentlemen, that the air-passages consist not only of the larynx, trachea, and bronchial tubes, but also of the cavities of the nose, the mouth, and pharynx: all these parts are lined by the same mucous membrane, modified, it is true, but subject to the same inflammation; our account of catarrh would therefore be incomplete, were we not to describe the disease as affecting the whole of the surface of the membrane. I shall except merely that of the mouth.

A common function is performed by the air-passages, namely, the transmission of air to and from the lungs; but various other functions are also adapted to different portions of the aerian mucous membrane, consequently the functional signs vary according to the part affected. We shall describe the symptoms in the following order:—1st, of catarrh of the Schneiderian membrane; 2d, of the pharynx; 3d, of the larynx; 4th, of the trachea and bronchial tubes.

Inflammation of Schneiderian membrane, or coryza.—The difficulty of transmitting the air is in proportion to the swelling of the membrane of the nares: there is a general sense of fulness, uneasiness, oppression, and weight, referred to the nasal cavities, and more particularly to the bridge of the nose. If the disease, as is frequently the case, ascends into the frontal sinuses, the same sensations extend across the forehead, accompanied by more or less of cephalalgia; the membrane also lining the nasal ducts becomes swollen; the affection extends to the lachrymal sac—the tears can no longer penetrate the puncta, and they flow over the cheek; the conjunctiva often participates in the inflammation, and reddens. The sense of smell is of course disturbed, and the patient distinguishes odours with difficulty.

The membrane, as I have already described, is in the first instance dry, all secretion is suspended, and this dryness occasions an irritating, itching, and hot sensation, more particularly at the anterior opening of the nostrils. You will observe there, too, that the small hairs are covered by a fine white pulverulent deposit, from the absorption or evaporation of the thinner parts of the previously healthy secretion. Then follows the acrid fluid, which, flowing upon the upper lip and alæ nasi, excoriates and irritates them. It often passes into the posterior part of the nares, distils, as it were, into the pharynx, upon the rima glottidis and epiglottis, and occasions a violent cough. However, this fluid soon changes in its character, and becomes bland; the cough then diminishes, the irritation subsides, and the transparent secretion gradually assumes a yellow puriform appearance, and at last nothing remains but inspissated mucus.

Inflammation of the mucous membrane of the fauces, or cynanche pharyngea, and tonsillaris.—Coryza is sometimes followed by, or co-exists with, inflammation of the mucous membrane lining the fauces; but that is by no means invariably the case, for these inflammations may happen perfectly independently of each other. If the pharynx be attacked, you will see that its surface is of a bluish red colour, and the young practitioner is often alarmed from the darkness of the tinge, thinking it indicative of approaching gangrene, but it arises from a greater quantity of veins existing in that part than in any other portion of the mucous surface, and the colour of these veins shew through the membrane. The membrane is also swollen.

When, however, the anterior part of the fauces is affected, then the anatomical characters vary, in consequence of the amygdalæ, velum, and uvula, participating in the disease; you will then see that the redness is brighter and more vivid; that all the parts are more swollen; the amygdalæ enlarge, approach, and touch each other, leaving a small triangular space below, having the upper and back part of the tongue for the base of the triangle, and a similar space above, covered by the swollen velum and uvula: abscesses of the amygdalæ frequently form; the membrane lining the Eustachian tube and the salivary glands often also inflame.

The functional signs have here a reference to three offices which the fauces have to perform: 1st, to the transmission of air; but the swelling is rarely so great as to cause any serious impediment to its passage; when there is any dyspnœa, it in all probability arises from the disease having extended into the rima glottidis, although I do not deny that the amygdalæ may so enlarge as to lie over and obstruct that orifice; 2d, to the transmission of the food: and here the swelling and consequent pain occasion the greatest difficulty in swallowing, or *dysphagia;* 3d, to the passage of air into the tympanum: this function is frequently impeded, so that the patient becomes more or less deaf, and violent pains often shoot from the fauces in the direction of the Eustachian tube towards the ear; the salivary glands often inflame and swell also.

The succession of changes in the secretion is not so manifest in this case as in coryza: it is true that the inflamed surface is in the first instance dry, the acrid fluid then follows; but when it assumes the bland character, it remains pituitous, and does not become so distinctly yellow. The quantity is often considerable, and obstructs the fauces from its viscous character.

Inflammation of the mucous membrane of the larynx, or laryngitis.—When inflammation attacks the mucous membrane of the larynx, it is called *laryngitis;* the functional symptoms then vary considerably, according to the intensity of the disease: thus, it may appear in a moderate form, which is a very common affection, or an aggravated one, which is fortunately very rare.

Moderate form.—The functions of the larynx are to transmit the air and to form the primitive note of the voice, so that the signs under this head refer only to these two objects. The transmission of the air is rarely obstructed, because the mucous membrane of the larynx, or rima glottidis, is but slightly affected, consequently there is no dyspnœa, or it is but very slight; but the voice alters from the commencement: it is hoarse, broken, sometimes almost lost, or the patient speaks only in a whisper; in fact, this is the common hoarseness, or cold, so constantly met with during rapid variations of temperature.

The mucous membrane is in the first instance dry: a sensation of irritation, heat, and tickling in the throat, is the consequence, and a violent cough follows, and continues until a sufficient quantity of mucus is torn from the trachea and bronchial tubes to moisten and lubricate the inflamed parts: the uneasy sensations are repeated, the cough is renewed, and often continues so long that venous congestions threaten, the face swells and becomes blue, the eyes are turgid, and the cerebral functions momentarily confused, so as to threaten apoplexy: the whole circumference of the chest, particularly at the attachments of the diaphragm, becomes tender, sore, and tired, from the reiterated coughing.

The acrid secretion soon however forms, and the cough, if possible, becomes still more aggravated, in consequence of its irritating the edges of the rima glottidis; as, however, it changes into the bland, transparent, and viscous fluid, and from thence into the yellow or mucous, all irritation gradually ceases, the expectoration becomes loose and free, and the cough disappears, although the voice often remains hoarse for a considerable time.

It is generally observed that the cough is most troublesome at night, keeping the patient awake for hours, and you will always see it aggravated by suddenly changing the temperature; as, for instance, in passing from the cold air into a warm room, or from a warm room into the cold air.

Severe form, or acute laryngitis.—But when the inflammation of this part of the mucous membrane is still greater, then it forms one of the most formidable and dangerous diseases to which man is subject.

You will recollect, gentlemen, that the danger of all the affections of the air-passages depends upon the degree of narrowness of their tube or tubes, and the consequent diminution of the quantity of air sent into the lungs.

The morbid anatomy of this affection is the same as in the preceding species; it differs only in the greater intensity of the inflammation. The mucous membrane lining the rima and larynx is considerably swollen and reddened; there is frequently serous effusion into its submucous cellular tissue, from whence it has been called also œdema glottidis: it is probable that even the cartilages participate in the inflammation. The same series of secretions occurs also here; and occasionally, although I think very rarely, abscess forms.

The epiglottis, in all the cases I have seen, is involved in the disease; its membrane reddens and swells; and the whole valve becomes erect, and is depressed with difficulty in the act of swallowing. In these preparations, you see, gentlemen, very distinctly the appearance which the rima, larynx, and epiglottis, put on in this disease.

Signs.—The functional signs have a reference to the voice, to deglutition, to coughing, and to respiration.

The voice soon becomes hoarse, descends into a whisper, and is finally, in extreme cases, totally lost. The power of deglutition is often considerably impeded: this happens from the inflammation occasionally attacking the œsophageal face of the aretynoid cartilages, and also from the difficulty of depressing the erect and inflamed epiglottis. This latter circumstance is of great importance to attend to, as the history of the two cases from which these preparations were obtained will sufficiently exemplify. The one is the larynx of a student at St. Bartholomew's Hospital. You see its inflamed state, and particularly that the epiglottis is thickened, erect, and of diminished elasticity. You know that the function of the epiglottis is to act as a valve in closing the rima during the act of deglutition; so that the food shall not pass into the larynx, but in the inflamed and inelastic state this function can be but imperfectly performed. In this case an ordinary purgative draught was given to the patient,

who, endeavouring to swallow it at once, was suffocated by the effort. You see, gentlemen, that the epiglottis could hardly have acted as a valve here, and the fluid consequently entered into the narrow orifice of the larynx. The second case, which is of this preparation, was very similar to the first. You perceive here also the great swelling and redness of the different parts of the larynx, and of the epiglottis. This case, as you may suppose, presented all the symptoms of acute laryngitis. The patient had been most boldly treated by his medical attendant; but the symptoms became aggravated; and I determined, if a very extensive mercurial friction did not produce a good effect in a few hours, to propose the operation of bronchotomy. The wife of the patient was told of her husband's dangerous position: she pressed him to settle his affairs, and he became, for the first time, aware of his peril. He by signs, insisted upon having some porter brought to him; he took a copious and hasty draught of it, threw himself violently upon his back, struggled, and expired.

The cough is often not so violent in the acute form of laryngitis as in the moderate; but the state of the respiration demands our utmost and most anxious attention.

As the disease progresses, the mucous membrane of the larynx becomes highly swollen; the orifice of the rima glottidis is narrowed to such a degree, that the purposes of life cannot be effected by the diminished column of air which passes through it: nature, however, makes a strong effort; she accelerates the movement; the respiratory muscles are thrown into rapid action, constituting dyspnœa from this cause. As the rima still becomes narrower, the difficulty of breathing increases; a violent burning pain, or suffocating sensation, is felt at the pomum Adami; the voice, which from the beginning was hoarse, is now lost; the air, in passing through the narrow orifice, produces a sound as if it passed through a brazen tube; the face becomes livid, the eyes red; the patient is erect; he manifests the most unceasing anxiety and jactitation; points to his throat as the seat of all his distress; and dies, sometimes overpowered and exhausted from his exertions; at other times, especially if strong and robust, in a desperate and convulsive struggle, as if under the bow-string of the executioner.

Inflammation of the mucous membrane of the bronchial tubes.—Having described these affections, we shall proceed to the disease as it affects the bronchial tubes.

When inflammation attacks the mucous membrane lining the trachea and bronchial tubes, the functional signs must have relation to the passage of the air only. There will be difficulty of breathing in this case, proportionate to the degree of swelling, and to the extent of the tubes affected. If only a single tube be inflamed, the dyspnœa will not be great; if it occupy the whole of the tubes on one side, then the difficulty of breathing would be considerable; if it attack both lungs it is often fatal. There is a feeling of tightness and oppression across the chest, and a burning sensation, often referred to the sternum and cough. In the first instance, the cough is dry, because the membrane is dry; then the secretion will become acrid, but very soon it becomes bland; it increases in quantity, and finally assumes the yellow colour, characterizing the species; the cough becomes looser, the expectoration free, and all the symptoms gradually subside.

Local signs.—The local signs of inflammation of the aerian mucous membrane are sufficiently evident, whilst the disease exists in the cavities of the nose or pharynx. The appearances described under the head of morbid anatomy constitute these signs: thus in coryza, the swelling of the membrane, its redness, firmness, and its series of secretions; in cynanche, pharyngea, and tonsillaris, the swelling, the redness of the different parts, and the secretions also, are so many local signs; but, independently of these, the symptoms arising out of the lesions of their different functions would be sufficiently indicative of these affections. When the inflammation attacks the larynx, the altered condition of that organ cannot be seen, and local signs do not properly exist, and we are obliged to depend upon those arising from the derangements of its functions of forming the voice and transmitting the air.

But when the affection descends into the trachea and bronchial tubes, not only we cannot see the condition of the membrane, by which to obtain local signs; but as the functions of these tubes are now so simplified as to be mere conduits of air, so the only sign we can obtain arises from the lesion of that function or dyspnœa. It is true there is also cough and expectoration; they are, however, common to various other affections of the lungs, and are consequently not diagnostic.

Dyspnœa is common to every affection of the lungs and heart, when arrived at a certain intensity. By it alone, therefore, we cannot determine the nature of the specific lesion.

One of the most brilliant discoveries of Laennec was that of a series of local signs, by which catarrhal inflammation of

the bronchial tubes is rendered almost as evident as any external disease of the body. We now proceed to describe them.

This inflammation has for its consequences a swelling of the mucous membrane of the bronchial tubes, and a series of secretions: the local signs, then, have a reference to these two conditions.

Absence of Respiratory Murmur. — When the mucous membrane is considerably swollen, it may completely obturate the tube affected: the consequence must be that the respiratory murmur cannot be heard in that portion of the lung which the tube supplies, since no air can pass the obstructed point; so that it frequently happens, especially in severe catarrhs, that the respiratory murmur is absent in various portions of the lungs, but as this absence of sound is common to several other affections of that organ, we call percussion to our aid; and by striking the chest, we find that the sound elicited is natural in catarrhs, whilst, in almost every other affection of the lungs, it is dull, when there is no respiratory murmur. The reason of this difference is, that in catarrh the cells are filled with air, which the obstruction confines and prevents the renewal of, and consequently occasions a good sound on percussion, although the murmur be lost; whilst, in other affections attended by absence of the respiratory murmur, the air-cells are impermeable, either from their consolidation or compression, and then the sound on percussion is invariably dull and fleshy.

Rhonchus Sibilans, or Sibilating Wheezing. —If the membrane be less swollen, and the bronchial tube not completely obturated, then the sibilating sound is heard. I refer you, for its characters, to the lecture on Auscultation. As I there observed, it consists of a distinct whistle, sometimes a chirupping, or it is like the clicking of a small valve. With this sound, the respiratory murmur is always indistinct at the part affected, because of the diminished calibre of the tube.

Rhonchus Sonorus Gravis, or deep Sonorous Wheezing.—It has long appeared evident to me, that as the swelling of the membrane diminishes, this sound appears. It is loud, extremely distinct, like the rough scraping of the bass note of a violoncello by an inexpert hand, or it is similar to the cooing of a dove; and its intensity is sufficient to cause a vibration upon the parietes of the chest, distinguishable by the hand. The respiratory murmur now becomes more distinct, evincing that the bronchial tubes are more patent; finally, the deep sonorous wheeze assumes a still deeper bass, merges into the respiratory murmur, mixes with it, and gives it a roughness, which I have designated *rough respiration.*

Rhonchus Mucosus, or Mucous Rattle.—The mucous rattle, or wheeze, occurs when the secretion appears, and is loud and noisy in proportion to the quantity of fluid thrown out. This sound, when it is formed in the trachea, can be heard through the medium of the air alone; but the application of the stethoscope, or the ear, to the surface of the chest, is necessary when it is formed in the bronchial tubes.

It frequently happens that viscous and tenacious secretions will adhere with sufficient force to obstruct the tubes, and occasion absence of the respiratory murmur, sibilation, or the deep sonorous wheezing; so that it would appear to be difficult to determine whether they depended upon the presence of secretions or a thickened state of the membranes: this difficulty is easily solved, by directing the patient to respire strongly, or to cough; then the air will be driven with sufficient force to remove the obstructing mucus, and the sounds will cease; the respiratory murmur will appear after a few efforts. If the sounds be occasioned by thickened membrane they will be permanent.

In examining these sounds, you must not expect to find them always precisely similar to the analogies I have presented to you: I have described only the exquisitely marked ones; for as the mucous membrane may be thickened in various degrees and in various parts—as the secretions vary in quantity and tenacity—so many modifications of these wheezings occur; but I assure you, gentlemen, a very little practice will render them perfectly easy to distinguish.

It is hardly necessary to speak of the value of these local signs; by them you can decide at once whether the disease in question be catarrh or not; you can determine the extent of the affection; for sometimes the wheezing may be heard only in a single line, as if in the direction of a single bronchial tube; sometimes it is heard all over one lung, occasionally over both. By judging of the distance of the sound from the ear, you can tell whether the tube affected be in the centre of the organ or at its superficies; you become aware of the intensity of the inflammation by the nature of the sound, and of its variation in different parts, by the variation of the wheezing. Thus there may be sibilation in one part, deep sonorous wheezing in another, mucous rattle in a third, or they may be intermingled. All this may appear to you now subtle and difficult; but there is not a more distinguishing organ than the ear, and I repeat my assurances that these difficulties exist only in the apprehension; even if they were greater, the subject is so important that you are bound to overcome them.

PATHOLOGICAL LECTURES,

Delivered in King's College, London,

BY

PROFESSOR MAYO, F.R.S. &c.

Surgeon to the Middlesex Hospital.

III.—*On Inflammatory Enlargement of Bone, Abscess, and Necrosis.*

THE bones are very liable to inflammation, which presents different features according to the kind of bone attacked, and to the state of the constitution which attends or produces it.

When a cylindrical bone (either the shaft or the articular extremities, excluding the immediate articular surface) is inflamed, in a person of unimpaired constitution, it often passes into conditions which are comparatively wholesome, and from which the step to restoration is direct. These conditions are, inflammatory enlargement of the bone, abscess, necrosis.

But when the articular aspect (that is, the surface to which the articular cartilage adheres) of a cylindrical bone, or when a round or flat bone, is inflamed, a different consequence ensues—the bone becomes *carious*. The same result ordinarily follows in any bone, if the inflammation proceeds from vice of the constitution, as struma, or taint in the habit, as syphilis.

In the present lecture, the first of the two cases which have been specified will be considered.

Simple inflammation of cylindrical bones is ordinarily characterized by the slowness of its march. It is attended with swelling, pain, and tenderness of the bone affected. It may be confined to the surface of a bone, or occupy the cortex, or extend into, or originate in, the cancellous structure.

a. Inflammation of the external surface of a bone is not separable from inflammation of the periosteum. The two parts are so intimately united, that increase of vascular action in the one necessarily extends itself to the other. Superficial inflammation of bone may be produced by a blow. If the inflammation does not speedily subside, it leads to the formation of an irregular and vascular growth of bone beneath the periosteum, which becomes at the same time more or less thickened. There is an injected specimen of superficial inflammation of the head of the tibia, corresponding with this description, in our museum. The tibia is more frequently inflamed than any other bone in the frame. Its dependent situation, which is against the free return of the blood, the extent of its subcutaneous surface, which renders it sensible to changes of temperature, its place and office in locomotion, which expose it to be frequently struck, account for this. After the tibia, the femur is, as commonly as any other bone, the seat of simple inflammation.

The principles of local treatment applicable to this affection are the following. A dependent position of the inflamed bone is to be avoided. If the bone is well covered with flesh, like the femur, exciting action upon the surface of the limb by issues, setons, blisters, diverts the inflammation. If the bone is close below the skin, like the tibia, local abstraction of blood, and the relaxation of the periosteum by warmth and moisture, are to be employed; when the pain is intolerable, an incision down to the bone gives relief, by lessening the tension of the inflamed membrane.

Simple inflammatory enlargements of bone frequently result from general disturbance of the health. In that case more than one bone is usually affected. It is extraordinary what various appearances are found in bones thus thickened by inflammation. In some the thickening is a more or less solid deposition of bone upon the cortex, which preserves its distinctness from the superadded growth; in others the enlargement distinctly consists in an expansion of the cortex, in the middle of which a cancellous structure appears to have developed itself; in others (a progressive state from that last described), the thickened cortex is nearly solidified. The thickening and these appearances are commonly met with on one aspect of a bone, occupying a third, or half, of its length. In connexion with the two last, the medullary cavity is found sometimes in its natural state, sometimes encroached upon by an inward expansion of the crust. Sometimes, in combination with cortical enlargement, the greater part of the cancellous structure is solidified.

The rationale of these various appearances is easily understood when we call to mind the structure of a healthy cylindrical bone. In the fabric of such a bone there is no essential distinction of texture. The cortical part differs from the medullary in this alone, that its cells are finer, their walls thicker. When a dried bone has been broken transversely, if the fractured surface is examined with a magnifying glass, the transition from the lightest cancellous structure to the densest part of the shell is seen to be perfectly gradual, the channels only becoming narrower, and the partitions stronger. All the varieties of inflammatory enlargement are either expansion of the cells and channels in bone, or thickening of their walls—at one pe-

riod the first process, at another the second, predominating.

In simultaneous inflammations of several bones, the indications are to soothe the local pain, to set right every disordered function, and to discover in the history of the patient, and to correct, any peculiarity that may exist either of original diathesis, or habit superinduced by mode of life, by former disease, or by medicine administered for it.

A young gentleman, through a severe course of study for academical honours, fell into a state of extreme dyspepsia, attended with pain in the head, and inability to collect his thoughts. At the same time three or four of his ribs on each side enlarged and were painful. He gave up his studies and went to the south of Europe, where he entirely recovered. A year or two afterwards he became my pupil, and began the study of medicine in London. After a little time his former symptoms returned, and I saw him in a state approaching to hypochondriasis, with the singular addition of painful swelling of the ribs. Upon going into the country he recovered.

There are specimens in our museum, the history of which I could not obtain. They consist of the bones of the head, the humerus, and femur, from the same subject. These bones are each greatly enlarged; the cranial bones and the lower jaw to three times their natural thickness; the whole of the shaft of the femur, and the lower half of the humerus, to the same extent. They are very light, yet of a close but perfectly spongy texture, the cortical part having entirely disappeared. I suppose that this appearance is a result of inflammation.

b. When inflammatory action has gone on for some time in bone, it is liable to produce abscess. The most precise information that we have upon this subject, is in a paper by Sir Benjamin Brodie, in the seventeenth volume of the Medico-Chirurgical Transactions. Sir B. Brodie describes three cases of this affection, in each of which it occurred in the tibia—twice in the lower, once in its upper end. The ages of the patients were 24, 23, and 34. In each case the bone had been diseased, with great suffering, for several years. In the first case, the state of the bone, when examined after amputation, is thus described:—

"The whole of the lower extremity of the tibia was harder and more compact than under ordinary circumstances, in consequence, as it appeared, of some deposit of bone in the cancellous structure; and in its centre, about one-third of an inch above the ankle, there was a cavity, of the size of an ordinary walnut, filled with a dark-coloured pus. The bone immediately surrounding this cavity was distinguished from that in the neighbourhood by its being of a whiter colour and of a still harder texture; and the inner surface of the cavity presented an appearance of high vascularity. The ankle-joint was free from disease."

In the second case, Sir Benjamin Brodie was led, by its similarity to the first, to suspect the real nature of the disease; he therefore trephined the bone at a spot two inches below the knee, to which the pain was particularly referred, and then, by means of a chisel, removed several other small portions of bone at the bottom of the cavity made by the trephine. At this part of the operation, the patient suddenly experienced a sensation which he afterwards described as similar to that which is produced by touching the cavity of a carious tooth, but much more severe; and immediately about two drachms of dark-coloured pus issued slowly from the part to which the chisel had been last applied. From this instant the peculiar pain belonging to the disease entirely ceased, and it has never returned; the patient being able to walk in three months after the operation, and the wound being completely cicatrized in six.

The early history of this case is an instructive comment on some of the remarks which have been before made. Two years before the operation above described, the patient applied for advice; having then suffered for ten years with slight enlargement and pain in the upper extremity of the tibia. The swelling now occupied about a third of the length of the bone, and the patient complained of excessive pain, which disturbed his rest at night: some parts of the swelling were tender to the touch. On the supposition that the disorder was chronic periostitis, the following method was adopted:—An incision was made longitudinally on the anterior and inner part of the tibia, extending from the knee four inches downwards, and penetrating through the periosteum into the substance of the bone. The periosteum was found considerably thickened, and the new bone, which had been deposited beneath, was soft and vascular. The immediate effect of the operation was to relieve the pain which the patient suffered. The wound gradually healed, and it was for some time supposed that a perfect cure had been accomplished. The enlargement of the upper extremity of the tibia, however, never entirely subsided. In a year and a half, pain was again experienced in it, which in five months became constant, but more severe at one time than

another, often preventing sleep during several successive nights. The enlargement of the tibia was as great as before, and the skin covering it was tense, and adhered more closely than is natural to the surface of the bone.

There is a preparation in our museum, of abscess in the lower end of the tibia, which corresponds very closely with that described in the first of the two cases which I have cited. The cavity of the abscess is lined with a highly vascular membrane; the cancellous structure around is very much condensed, but is not as compact as the cortical texture of ordinary bone.

The patient was a young woman who was under my care in the Middlesex Hospital: she had suffered eleven years with enlargement and pain in the tibia, for which, some months before, she had been under treatment, and had left the hospital relieved. She returned in a state of aggravated suffering. With the knowledge of the cases which I have described, I thought it probable that there was abscess in the bone. But there were reasons which induced me to amputate the limb in preference to using the trephine. The disease had commenced in the upper part of the tibia, and had involved the knee-joint, which had become anchylosed at an inconvenient degree of flexion. The lower two-thirds of the tibia were enlarged, and involved in the present disease [as it turned out, a second small abscess existed in the middle of the shaft of the bone]; the whole limb was greatly extenuated, and the patient was in very delicate health,

from long-continued suffering. She recovered.

Another specimen of abscess in bone, which is represented in the adjoined figure, was given to me by Mr. Arnott. It was situated in the middle of the femur. The cancellous structure around it had become nearly consolidated. The abscess was found unexpectedly, on making a section of the femur after the patient's death. The symptoms belonging to it had been masked by disease of the joint, which had supervened upon the extraction of a loose cartilage from the knee, and had rendered amputation necessary.

c. Mortification is the term used to denote the death of soft parts—*necrosis*, that of bone. Inflammation of the soft parts occasionally terminates in their death. In like manner, inflammation of bone sometimes terminates in necrosis.

A child, between three and four years of age, was seized with an inflammatory swelling of the leg, attended with considerable symptomatic fever. By the use of the ordinary remedies the symptoms were mitigated; but, in three weeks, a deep-seated abscess was distinguishable, which was opened. The child recovered its health, but the enlargement of the leg continued, and a sinus remained where the abscess had been punctured. At the expiration of a year, a piece of bone projected at the opening, which, when I drew it out, proved to be the cortex of the shaft of the fibula. It is to be observed, however, that necrosis does not in general commence with the acute seizure described in the preceding case; and that neither does the dead bone which comes away usually present those appearances which continued inflammation produces.

Death of a part, or of the whole, of the shaft of a long bone, is liable to occur from childhood to the age of twenty or twenty-five, or even to a later period. The tibia, femur, lower-jaw, humerus, fibula, radius, and ulna, are the bones most commonly so affected.

When the shaft of a long bone is necrosed, a salutary process is immediately set on foot, which comprehends three objects: the first is the separation of the dead part, or *sequestrum*; the second, the formation of a temporary bone, to serve while the separation of the sequestrum is in progress; the third, the final restoration of a portion of bone, accurately resembling that which has perished.

1. The detachment of the sequestrum is effected partly by the removal of the contiguous layer of living substance—this is proved by the entire and uninjured surface which the greater part of the sequestrum exhibits; partly by the superficial absorp-

tion of the dead bone itself, through the agency of the living textures in contact with it. The last observation is presumed to be correct, from the excavated and honeycombed surface which a part of the sequestrum generally presents. At the same time, it must be admitted that this appearance may result from the bone having died to that extent only, leaving (which, no doubt, sometimes happens) a partial thin crust of bone living. Mr. Wilson gives a curious proof that the living tissues in contact with a bone can operate its partial absorption. Adverting to the practice of transplanting teeth, which existed in his time, he observes that the teeth used to adhere at first, but that they seldom remained in their new sockets more than three or four years: several such teeth, which he examined, had lost their fangs by absorption.

2. The temporary new bone is formed around the dead. The dead bone irritates the surrounding tissues, which, while they shrink from it, thicken and give origin to a callus; that ossifying, as in fracture, forms an irregular shell of porous bone, enclosing the sequestrum. In this irregular shell, holes are either left, or wrought by absorption, which communicate by means of sinuses with the surface of the limb; these holes and sinuses in the common order of phenomena are the channels through which the sequestrum finally makes its exit. The art of the surgeon is directed to accelerate the removal of the dead bone, by making convenient apertures in the shell, as soon as ever the sequestrum is loosened.

3. No sooner is the sequestrum removed, than a growth from the cancellous structure of the ends of the bone and from the interior of the temporary shell, takes place, and fills the vacant cavity; at the same time the temporary shell of bone contracts in volume by a process of modelling absorption and deposition, and becomes smooth upon its surface, being destined finally to assume the exact structure of the bone which has been lost.

In the ordinary course of a necrosis of the shaft of a cylindrical bone, it appears to be the cortical part alone which dies; at all events the cortical part alone comes away as sequestrum. The cancellous structure, which it enclosed, whether then dead or living, is absorbed wholly, or in great part, before the sequestrum becomes detached. One may suppose that it does not die, for two reasons—first, the cancellous structure has a much greater force of vitality than the cortex, and might be expected to survive what would destroy the latter; secondly, if the cancellous structure die with the cortical part, where is the agent which removes it?

The process of death, with subsequent reparation, which has been described, is common in the shafts of the long bones, and is rarely excited elsewhere; something like it, however, has taken place in the lower jaw, and is stated to have partially occurred after necrosis of the scapula.

Necrosis, without reparation, may take place of the articular ends of long bones. There is a specimen in our museum of nearly half the outer condyle (in a diseased knee which I amputated) necrosed, and in process of separating; and another, in which a portion of the condyles of the humerus is in the same state. In these instances, any attempt at restoration is prevented by the disease occasioned in the contiguous joint.

Necrosis of the cuboïd bones, for the same reason, is unattended with reparation.

Necrosis of the cranial bones is followed by that meagre reparation only, which has already been described in treating of their fracture. There is in our museum nearly the whole of a parietal bone, which came away from a patient under my care in the Middlesex Hospital. It was detached in five months. No cerebral symptoms occurred during the process.

The term *exfoliation* is often employed to denote the separation of dead bone. There is, however, something very capricious in its use: it is seldom applied to the separation of a sequestrum, but in every other case it is used. Thus, it is applicable to the preceding instance, in which the whole thickness of the parietal bone *exfoliated;* and in like manner to that separation of a segment of a long bone (from the narrowest rim to four, six, or even eight inches of the shaft), which sometimes follows an amputation.

The term exfoliation perhaps is used with most propriety when applied to the separation of a surface only.

The surfaces of bones have their vitality readily destroyed. A blow upon the cranium, or upon the tibia, which strips the bone of its periosteum, is often followed by this consequence. In a young person, however, the bone will often recover, unless considerable violence has been done to it. The denuded surface, instead of becoming dry and white, in four or five days assumes a light red tint, which gradually deepens; then pouring out a gelatinous exudation, it becomes covered with organized and florid granulations. The same appearance is seen in the healing of a healthy stump that has not united by adhesion: the cut end of the bone, after a fortnight, is covered with its own growth of granulations.

The inspection of such a stump at this period explains the process of reparation in *compound fractures;* that is to say, in fractures which communicate with an external wound. In a compound fracture which

goes on wholesomely after the first inflammation, the whole internal surface of the wound presents an uniformly granulating surface of rapid growth, which fills up its cavity. In this growth of granulations, cartilage is formed, which constitutes a callus, that ossifies there, as in simple fracture, only with more assistance perhaps from the vessels of the bone itself.

When a portion of the entire thickness of the crust of a cylindrical bone is necrosed through external injury, and remains denuded, it does not come away as a sequestrum, but exfoliates; the process of reparation which then takes place is *from within*, and consists in a thickening and expansion of the adjacent cancellous structure. I have seen the same process set on foot after necrosis of part of the subcutaneous shell of the tibia following inflammation.

MEDICO-LEGAL DISINTERMENTS IN FRANCE AND ENGLAND.

From an Introductory Lecture delivered at the Aldersgate-Street Medical School Nov. 1, 1834.

By Dr. Cummin.

[Having noticed the very unsatisfactory figure made by Mr. Hunter, as a medical witness, at the trial of Donellan for the poisoning of Sir Theodosius Boughton, the lecturer proceeded—]

The trial just spoken of was remarkable for another circumstance, to which I am desirous of drawing your attention. Evidence was given in this case as to the appearances observed on a medico-legal disinterment. The body of Sir Theodosius Boughton was taken from the grave on the *eleventh day* after death, and examined with a view to detect the marks of poison. The description given of the appearances by Dr. Rattray is curious:—"The body appeared swollen generally; the face was of a round figure, extremely black." This, by the way, corresponds with the observation made by Sir Henry Halford, in a paper read not long since at the College of Physicians: Sir Henry mentioned that he was present at the examination of Sir Theodosius Boughton's body, and that the face resembled "a pickled walnut." But to return:—"The lips were swelled and retracted, shewing the gums; the teeth were discoloured; the tongue protruded beyond the teeth, and turned up towards the nose. The blackness diminished as it descended towards the breast. The remainder of the body was spotted in several parts." Yet this was an appearance (the blackness confined to the head and upper part of the chest) in which Mr. Hunter—in his great zeal for the prisoner's safety—said he could see nothing but the effect of putrefaction. Dr. Rattray, however, distinctly deposed to having observed the same appearance in the body on the third or fourth day after death.

I shall not trouble you with further details of the evidence given on this occasion; suffice it to say, that they were listened to with great attention by a crowded court, and contributed strongly, in conjunction with the other circumstantial evidence of the case, to convict the prisoner. My purpose in saying so much on the subject is to endeavour to shew you that the duties of the medico-legal practitioner are often very curiously diversified; and that, even were there no provision for legal medicine as a distinct study—as was the case in this country at the date of the trial in question, and for many years after—still events will from time to time occur, rendering it imperative on the practitioner to undertake some of the most difficult investigations. And among those difficulties, none are perhaps more likely to tax his ingenuity than medico-legal disinterments.

What extraordinary things have been achieved in France of late years, by exploring the secrets of the grave, are sufficiently celebrated. Those achievements constitute almost a new æra in legal medicine, and confer a triumph on medical science. The murderer has been discovered; the mutilated, perishing, and nearly evanescent remains of his victim, have been made to give their evidence against him; the poison that deprived the victim of life has been rendered up grain for grain; the wound that dispatched him has remained to give its awful testimony years after.

It is in France chiefly that this subject has been considered in all its bearings, and carried to a state of high perfection, both by experiment and actual practice. Orfila has particularly distinguished himself by his researches in this respect; his work on Juridical Exhumations is as ingenious as it is singular. In it he enters deeply into the examination of the physical changes which the various tissues of the body undergo, according to the length of time elapsed up to the period of investigation—whether the parts have been deposited in earth, water, or other enveloping substances; and with especial reference to forensic medicine, he shews how examinations of this kind may be made to elucidate obscurities relative to poisoning, wounds, infanticide, the determination of sex, age, stature, and every thing that can indicate identity. He has, besides, di-

vested the process of much of its terrors. He has demonstrated that, with certain simple precautions, there is no danger in examining a body at any period subsequent to interment. It was the general impression up to his time that there was; but now, however forbidding, in the eyes of persons not accustomed to such things, the duty of the examiner may appear, no medical man will look with aversion on the task—at least none who has made himself but moderately acquainted with the duties that devolve upon him; he will, on the contrary, seize the opportunity when it offers, of at once promoting science, and benefitting the community by his labours.

In the drawings which are before you, you have copies of the appearances which presented themselves to Orfila and Lesueur, in their experimental investigations.

[Some drawings of persons disinterred at different times were here exhibited and described.]

I shall give a few examples of what may be effected by researches of this kind. Not long ago proofs of poisoning were discovered in the remains of a body that had lain in the earth for *seven years*. The case occurred at Lyons. A woman had long been suspected of having poisoned her father; but for want of direct proof, justice could not reach her. At length a circumstance occurred which threw a strong light upon her guilt; and though seven years had elapsed, it was thought requisite and proper to disinter the body. The examination and the necessary experiments were conducted by M. Ozanam, assisted by M. Ide; and complete evidence of the presence of arsenic among the shapeless tissues of the stomach was obtained.

There was a very singular case investigated in Paris during the last year. I allude to that in which the remains of a murdered female were disinterred, identified, and the mode of death ascertained, after a lapse of *eleven years*. Little more than a heap of bones was found; but from their position, condition, and several peculiarities, the reporters (among whom we find the names of Orfila, Barruel, Chevallier, and Boys de Loury) were enabled to come to the following conclusions: — 1. That those were the bones of a human skeleton; 2. of a female; 3. the age from 60 to 70; 4. the stature about five English feet; 5. the hair had been bright blond, but latterly was mixed with grey; 6. the deceased had died of strangulation—the act being homicidal; and 7. the remains had lain in the earth for several years.

The prisoners, who had long been suspected of the murder, were tried and condemned to the gallies for life—having had a narrow escape of the guillotine.

It may be perhaps curious, and not uninteresting, to you, to be reminded of certain disinterments which have taken place in this country for medico-legal purposes: we have some very remarkable ones on record. As a counterpart, and a sort of contrast to the last case, let me call your attention to what occurred in the year 1758, at Knaresborough, in Yorkshire. I allude to the celebrated case of Eugene Aram, around whose history the pen of the novelist has recently thrown so much attraction; but whose plain unvarnished story is in itself, independent of any collateral fiction, almost a romance. This highly-gifted but unfortunate person, instigated by penury, and jealousy, as it is said, but, above all, by the instigation of a depraved and profligate companion, committed a murder on one Daniel Clarke; and it was not till *fourteen years after* that proof of the crime was procured: that proof was the skeleton of the victim. Suspicion had never been attached to the name of Aram, but the desperate Houseman was long supposed to have been the assassin. At length, a skeleton being found accidentally, in a field at Thistlehill, near Knaresborough, it was thought to be Clarke's, and Houseman was examined at the inquest. He was much confused and conscience-striken on the occasion; but affecting a degree of levity which had just the contrary effect to what he intended, he took up one of the bones, and said, "This is no more Clarke's bone than it is my bone." Upon which he was immediately questioned as to where Clarke's bones were; for he had now as good as confessed that he knew. He turned king's evidence—denounced Aram as the murderer—admitted that he had been an accomplice, and described exactly where the true skeleton would be found. In St. Robert's Cave, he said, they would find it, "just by the entrance, and with the head turned towards the right."

On the trial, *the skull* was produced in court—a ghastly witness against the accused. On the left side of it there was a fracture, that, from its nature, could not have been made but by the stroke of some blunt instrument; the piece was beaten inwards, and could not be replaced but from within. Mr. Locock, the surgeon, who was the chief, if not the sole, medical witness examined as to the appearances, gave it as his opinion, "that no such breach as that pointed out in the skull could have proceeded from natural decay—that it was not a recent fracture by the instrument with which it was dug up, but seemed to be of many years' standing." This seems to have been about the amount

of the evidence which, taken with the circumstantial detail given by Houseman and some other witnesses, operated in procuring the prisoner's conviction: if, indeed, Aram did not himself do more to that end, by the extraordinary and truly surprising defence which he made—at once singular for its eloquence and its learning. This, I may remark, was the opinion of the celebrated Dr. Paley, who happened to be present at the trial. Many years afterwards, when conversing with some friends, about certain lives in the Biographia Britannica, which somebody observed were those of obscure individuals—Eugene Aram's, for instance. "Nay," said Paley, "a man that has been hanged has some pretensions to notoriety, and especially a man who has *got himself hanged* by his own cleverness, which Eugene Aram certainly did.

Aram called no witness for the defence. He relied wholly on his own ingenuity, and produced, certainly, most powerful arguments to shew that the bones discovered were those of some hermit, who had in former times dwelt in the cave; and he mentioned several caves similar to St. Robert's, in which human bones had been found. When we recollect that it is the great principle of our law, that no man can be condemned for murder unless the body of the person supposed to have been murdered be found and identified, we must at once admit the importance of the line of argument taken up by the accused.

The identity, in fact, of the skeleton was not made out: so far from its being proved to be Clarke's, it was not even shewn to be that of a man; the sex was not proved—nor the age—nor, in short, any of the numerous points which, no doubt, would be elicited were the examination instituted at the present day. All that was ascertained was, that here was a human skeleton found as directed to be sought for by a wretch who had given information in expectation of pardon for his crimes. Why might it not be wholly a plot of Houseman's, to get rid of the unfortunate Aram? He might have buried the bones there himself, or found them buried when digging in the cave, perhaps, for the concealment of plunder.

Let it not be thought that I am of the number of those who hold Aram to have been guiltless. The man is said to have confessed his crime before his execution. But my object in dwelling on the circumstances is to shew the very insufficient circumstantial testimony on which the prisoner's life was forfeited, under the semblance of law and justice. The truth seems to be (as Paley said, and as now seems generally admitted), that Aram was chiefly indebted to his own eloquence and cleverness for the forfeiture of his life.

About the close of the seventeenth century occurred the deeply interesting trial of Mr. (afterwards Judge) Cowper, for the murder of a young Quaker lady. There can at present be little doubt but that the deceased drowned herself in a fit of disappointed love: at the trial, however, and for a long time after, much contrariety of opinion prevailed as to the question, whether she was simply drowned, or murdered first and thrown into the river afterwards. The evidence for and against the prisoner was chiefly derived from the appearances of the body disinterred *six weeks* after burial. No water was found in the stomach or lungs—a fact deemed conclusive by one party that the lady *could not* have been drowned; but competent witnesses on the other side—among whom were Garth, Sir Hans Sloane, and Cowper the celebrated anatomist—shewed, according to a more correct pathology, that the introduction of water into the cavities on submersion is purely accidental, and that there were appearances enough in this case to indicate suicidal drowning. The lungs, stomach, and abdominal viscera, I may add, were found perfectly sound at the time of the medico-legal examination.

In the year 1828 there was another remarkable case, in which the chief evidence for the prosecution was derived from a medico-legal disinterment. You will probably remember the circumstances of the trial of Corder, for the murder of Maria Martin. The body of the victim was found buried in a barn, where it had lain for *eleven months*. On the trial, Mr. Lawton, the surgeon, stated, that he first saw the body in the hole where it was discovered. It was much decomposed, and had the appearance of having been buried for nine or ten months at least. He then described the dress, and gave so many particulars relative to what he observed, that the deceased was completely identified and the manner of her death exactly made out. A handkerchief was found tied tightly round the neck, forming a groove. In the neck there was also the mark of a perpendicular stab, about an inch and a half in breadth, extending deep into the neck. There was an appearance of injury to the right eye, and the right side of the face; it seemed as if something had passed in at the left side, through the cheek, removing the two last grinders, and then out at the right orbit. This was apparently done by a pistol ball. The lungs and chest were also examined, and there was found a wound between the fifth and sixth ribs, penetrating into the substance of the heart. This was effected by a sword, which was produced.

The sword was identified in court by the cutler who had sharpened it for Corder; and the head of Maria Martin was also identified, chiefly by the loss of a tooth in the upper and lower jaw. The observations made in the lungs, too, were important; there were adhesions of the pleura, and other marks, by which it appeared that the deceased had had cough and pain of the chest not long before death,—which was precisely Maria Martin's case.

I have selected these few examples out of a considerable number which might be adduced, to prove the importance of a special attention to researches connected with disinterment.

* * * *

ON THE

INTERNAL ADMINISTRATION OF PURE VERATRIA.

To the Editor of the Medical Gazette.

Sir,

The object of the following communication is to call the attention of your numerous readers to the possibility of administering pure veratria internally, without subjecting the patient to the operation of any of those dangerous properties which all writers, and myself, amongst others, have hitherto ascribed to this substance.

The acknowledged value of colchicum autumnale in the treatment of a variety of diseases, appears to have given rise to considerable expectations that the discovery of the active principle of the plant would be of great advantage to medicine; and accordingly we find, that no sooner had MM. Pelletier and Caventou succeeded in obtaining veratria, than a number of experiments were instituted, with a view to determine its action upon the animal economy. These were principally conducted by MM. Andral and Magendie, and agree in proving it to be possessed of most energetic properties, and similar, though in a more exalted degree, to those ascribed to white hellebore, veratrum sabadilla, and colchicum, by Schabel, Orfila, Sir Everard Home, and other observers. Unfortunately, however, these properties appeared to be of such a nature as almost to preclude the possibility of veratria ever being employed in medicine. From M. Andral's experiments on animals, it was proved that when applied directly to any of the tissues it produced rapid inflammation of the part; and that when introduced in small doses into the system, either through the medium of the veins or intestines, it occasioned violent vomiting and purging; and in larger doses, tetanus and death.

M. Magendie administered it internally in the human subject, and found that, in the dose of a quarter of a grain, it acted powerfully upon the intestines, and produced very copious dejections; and he recommends its employment on this account, as a convenient remedy in cases requiring a speedy action upon the bowels, particularly in old men, in whom he states his having used it with much advantage; he also advises its substitution for the preparations of colchicum, in the treatment of those diseases in which they had been employed. Such, however, was the dread inspired by the observed properties of the new alcaloid, that few practitioners ventured upon a trial of it; and much surprise was expressed that, with these before his eyes, M. Magendie should have ventured upon such a dangerous recommendation.

Veratria has hitherto been little employed in this country; but where it has been used, the effects produced have been nearly similar to those already recorded by practitioners on the continent; and agree with them in proving it to be possessed of great activity as a purgative and emetic: so much so, indeed, that I believe its administration has been very generally abandoned, as being fraught with greater danger, from this circumstance, than can be counterbalanced by any good effect that may arise from it. This was also my own opinion at the time my work on Veratria was published; and as the impressions I had received from the writings of others had to a certain extent been confirmed by what I had myself observed, I considered it my duty to lay them before the public. Since then, however, I have employed pure veratria internally to a considerable extent, in consequence of having observed that its salts produced none of those effects which had been ascribed to it, and in very few cases out of a great many in which it had been employed, even when given to the extent of four or six grains in twenty-four

hours, has it produced the slightest purgative effect: it has often occasioned a degree of nausea, but this may easily be obviated by taking care that too large a dose be not given at one time. To what are we to ascribe this great diserepancy in the operation of so powerful a substance? In my opinion, it may arise from one of two causes, or perhaps from both. Veratria, when first used, appears to have been obtained in part from the colchicum autumnale, and on this account differed in some material points from the alealoid, as it is now prepared from the seeds of the veratrum sabadilla: so much so, that it has been described as a new principle by MM. Géiger and Hesse, under the name of colchicine—one of the most prominent properties of which, according to those gentlemen, is to produce violent purging and then vomiting. Two counter-experiments are related by them, in one of which a small dose of *colchicine* was given to a cat; at the end of an hour it was violently purged; vomiting next came on, and then death; and upon examination it was found that violent inflammation had taken place in the stomach and intestinal canal, with sanguineous infiltration throughout their whole extent. The second experiment was made upon a younger cat, and a smaller dose of *veratria* was administered: the animal died very speedily, but neither vomiting nor purging are mentioned as having been produced; and upon examination it was observed that the superior part of the œsophagus was the only portion of the alimentary tract where inflammation had taken place; and it was remarked that this part had escaped injury in the animal which had been poisoned by the *colchicine**. These facts might of themselves be sufficient to account for the great difference in the observed action of veratria above alluded to; but it ought also to be kept in mind, that it is very probable the alcaloid, from the large quantity which has been lately brought into the market, may now be made in a state of greater purity, from that dexterity in its manufacture which practice alone can give. Whichever explanation of the circumstance may be adopted, it certainly appears to me that pure veratria, or any of its salts, may be substituted for preparations of colchicum, not only with perfect safety, but with considerable advantage, provided an ordinary degree of caution be observed in its exhibition.

The best form of administering it is that of pill; and the following prescription is the one I generally make use of:—

℞ Veratriæ, gr. ii.; Pulv. Rad. Glycyrrh. gr. xii.; Ext. Hyosciam. gr. vi. M. fiat mass. in pilul. aequal. duodecim. divid. quarum sumat unam ter in die.

For the two last ingredients it will sometimes be found advantageous to substitute a few grains of compound rhubarb pill, especially when there is a tendency to costiveness. This prescription I have found very useful in the treatment of painful spasmodic affections, rheumatism, gout, &c. It has also been used in diarrhœa with considerable effect; and in this disease one pill ought to be given after each stool, until the relaxed state be removed. After a few doses have been taken, the patient generally experiences a sensation of warmth in the stomach, which extends over the abdomen, chest, and upper and lower extremities: this is succeeded by a feeling of tingling in various parts of the body, and frequently a degree of perspiration is induced. The same effects shew themselves when either of the salts of veratria are made use of, though perhaps in a greater degree: those which are most easily obtained are the sulphate, acetate, and tartrate; their doses are the same as that of the base itself, and a similar prescription may be employed.

I ought to apologize for trespassing upon your valuable pages; but the subject appears to me to be one of some practical importance, and this must be my excuse.—I am, sir,

Your obedient servant,

A. Turnbull.

Russell-Square, Oct. 28, 1834.

* Jour. de Pharmacie, Mars 1834.

STRICTURES OF THE URETHRA,

TREATED WITH THE STILETTE.

To the Editor of the Medical Gazette.

Sir,

Some remarks relative to Mr. Stafford's urethral stilettes, which appear in the Medico-Chirurgical Review of this

month, induce me to trouble you with another case in which, I believe, more benefit was obtained by Mr. Stafford's instrument than would have been derived from any other means with which I am acquainted.

The total absence of secrecy, and the presence of candour, which have appeared to me in all Mr. Stafford's communications, prompt me, in the first instance, to allude to the case, already published, with which my name is connected, and to state that I know of no other means by which equal advantage, with the same trifling inconvenience, could have been obtained.

The case I now allude to was one of a gentleman, about sixty years of age, who came to me with abscess in perineo, and an impassable stricture a little anterior to the membranous portion of the urethra. He had, thirty years before, suffered from stricture, and had consulted Mr., now Sir Astley, Cooper, who, he said, gave him so much pain, he had not courage again to consult a surgeon till in his present distress. A free opening was made into the abscess, which was extensive, and the larger portion of his urine passed through it, giving him intense pain. I was successful in my treatment of the stricture, and could pass a tolerable sized bougie; but though I felt satisfied, from the direction of the instrument, that it was in the prostatic portion of the urethra, I could not by any manipulation get the point of the catheter into the bladder. The patient, from continued suffering, lost his health; and, from want of appetite and sleep, was reduced almost to a skeleton. The impression conveyed to my mind from the end of the catheter produced a desire to have a controllable stilette at that point; and I requested Mr. Stafford to meet me with his instruments. The curved canula with stilette was applied, and urged on about one-third of an inch; after which a catheter of equal size was tried, but without effect. In four days, however, after the operation, the catheter passed freely, and was kept in for some time; then the patient was taught to pass it for himself, when required, but prohibited from attempting to pass urine without the catheter, till the seat of the abscess had lost all sense of tenderness, and the fistulous opening perfectly closed. Appetite, sleep, and health, were recovered, and continue,—or I am confident I should have again been consulted.

I perfectly agree with the editors of the Review that it is not probable any one surgeon should have in his own practice twenty-one cases, in a comparatively short time, of urethral disease requiring the use of a cutting instrument; but as, with a very limited practice, I have provided Mr. S. with two cases, it is but fair to suppose that he, as the inventor of the instruments, has obtained the greater number, if not all, the cases from other surgeons. It is *not fair*, at least not kind, to imply that the cases must either have been ill treated, or that Mr. Stafford had heedlessly employed his stilette, because he had invented it. Young surgeons, who may not be so connected as to command hospital patronage, if they exert themselves, without quackery, to obtain some small portion of public confidence, should surely be treated with kindness by the periodical journals of their own profession.—I am, sir,

Your obedient servant,

W. KINGDON.

Oct. 23, 1834.

ON THE

TREATMENT OF GONORRHŒAL AND SYPHILITIC AFFECTIONS WITH IODINE.

To the Editor of the Medical Gazette.

SIR,

THE facts to which the accompanying cases refer are so important, that I conceive it my duty to lay them before the public; and as there can hardly be two opinions on the subject, it would be no compliment to apologize for sending you this communication, for I do not doubt that you will consider it worthy a place in your columns.

Remaining respectfully yours,

CHARLES CASWALL.

18, Woburn Place, Russell-Square,
Oct. 28, 1834.

CASE I.—Henry Falconer, æt. 23, applied at the General Dispensary, Aldersgate-Street, on the 26th of July last, with a severe gonorrhœa, which had existed about a month; and he had been previously affected with the disease five

times. He complained of constipation, and excessive pain in emitting his urine.

He was ordered to take fifteen grains of jalap, and three of calomel, for the immediate relief of his bowels, and half an ounce of castor oil when occasion required.

The hydriodate of potash, in the form of an ointment, was also ordered (a drachm of the hydriodate to an ounce of lard), which was directed to be rubbed in along the course of the urethra twice daily, and to be applied around the penis (on lint) during the day and night.

July 31st.—The gonorrhœal discharge was much diminished, and the pain caused by the passage of the urine was not so severe. The ointment and oil to be repeated.

Aug. 2d.—The discharge was much less, and the pain had subsided. The ointment was directed to be continued.

14th.—The discharge still continued gradually to diminish. Twelve minims of the tincture of iodine were now prescribed to be taken three times a day in cold water.

Sept. 2d.—The ointment and tincture were ordered to be continued, although the discharge had entirely subsided.

On the 18th no return of the discharge had occurred, and the patient was dismissed cured.

Case II.—George Allum was admitted a patient on the 15th of July, with gonorrhœa, an ulcer on the glans penis, and in the right groin a bubo the size of a hen's egg, in an advanced stage of suppuration. The bowels constipated.

℞ Pulv. Jalapæ, gr. xviij.; Hydr. Sub. gr. iij. M. Ft. Pulv. statim sumend.

℞ Pil. Hydr. Submur. Comp. gr. v. omni nocte maneque.

The hydriodate of potash ointment to be applied, as in the former case, both to the urethra and the bubo.

July 17th.—The ointment and pills were repeated; a compound senna draught was ordered as an occasional aperient, and a lotion of the subacetate of lead to be applied to the ulcer on the glans.

29th.—The ulcer was healed. The ointment and draughts were recommended to be continued.

August 2d, 9th, and 14th. — The patient persisted in the use of the ointment and aperient draughts as before, and on the 19th he was dismissed cured.

Case III.—Wm. King was admitted a patient on the 12th of August, with a gonorrhœal discharge of a week's duration, and attended with the usual symptoms.

The ointment of the hydriodate of potash was applied to the penis, as in the two preceding cases. The bowels to be relieved by castor oil when necessary.

August 16th.—The ointment was continued, and fifteen minims of the tincture of iodine were now ordered to be taken three times a-day.

19th, 26th, 30th, and September 4th. —The medicines were repeated.

September 16th.—The patient was dismissed cured.

Case IV.—Thomas Oxford, æt. 22, admitted on the 14th of August, with gonorrhœa of two days' duration.

The hydriodate of potash was used, as in the former cases, and twelve minims of the tincture of iodine were directed to be taken three times a-day.

On the successive days—viz. the 16th, 19th, 26th, and 30th—the ointment and tincture were ordered to be continued.

September 4th.—The medicines were repeated.

16th.—The bowels were much confined, and the compound senna mixture was prescribed accordingly.

18th.—The gonorrhœal discharge had ceased the day preceding. One of the testicles was considerably inflamed and swollen. Eighteen leeches were therefore applied to the testicle, and a dose of jalap and calomel was directed to be taken at night, as the senna mixture had not relieved the bowels sufficiently. After the leeches had been removed, a linseed-meal poultice was applied to the testicle.

20th.—Twelve leeches were ordered, with the senna mixture and poultices.

23d.—As the inflammation had nearly subsided, and the swelling was greatly diminished, the ointment of the hydriodate of potash was ordered to be applied to the swollen testicle, and twenty minims of the tincture of iodine to be taken three times a-day.

25th.—The medicines were repeated.

27th. — The patient was dismissed cured.

Remarks.—The foregoing cases illustrate the effects of iodine in gonorrhœa, hernia humoralis, and venereal bubo. In the two latter diseases I have not used

it during the incipient stages; but I have witnessed the disappearance of a sympathetic bubo, the iodine having removed the gonorrhœal inflammation, as indeed it would be natural to expect.

The duration of the gonorrhœal discharge under this treatment is not greater, if so great, as when other remedies are employed; and the medicines in general use are of so nauseating a quality, that I conceive almost any others would be preferable. The cases I have now the pleasure of communicating sufficiently show that iodine is by no means a disagreeable substitute for cubeb pepper and copaiba. The remedy is a sure and safe one: its efficacy is perceptible from its earliest application; and under such treatment the disease continues gradually to subside, without any unfavourable occurrence.

The supervention of hernia humoralis in one of the cases to which I have alluded, was no doubt principally to be referred to the constipated state of the bowels.

It only remains for me to observe, that I have not opened a suppurative venereal bubo for the last eight months, and that I have almost invariably found the application of iodine sufficient to promote the absorption of the pus.

I cannot call to mind even a single instance in which the remedy has been unsuccessful. I have for some time past paid particular attention to the subject, and I should consider myself culpable in the extreme were I any longer to conceal such facts from the profession.

FATAL EFFECTS OF AN OVER-DOSE OF STRAMONIUM.

To the Editor of the Medical Gazette.

Sir,

In the treatment of the following distressing case, I have to acknowledge the very kind and able assistance of my friends, Messrs. Robinson and Propert; also that of Drs. Watson and A. T. Thomson.

On Saturday, 26th ult. my little daughter, aged two years and a quarter, called, with her mother, at the house of a friend, where it appears that the child, whilst amusing herself, swallowed, unobserved, some seeds of the datura stramonium that were lying on a side-table to dry for garden-use. The quantity eaten, or more properly swallowed, for there were none of them masticated, was afterwards ascertained to exceed one hundred, and weighed about sixteen grains; as ascertained by subsequently weighing a similar number of seeds.

No symptoms of a nature sufficiently alarming to arrest particular attention, presented themselves before the lapse of an hour, although, on reflection, the child had previously (indeed from within half an hour of having swallowed the seeds) evinced great irritability of temper, accompanied by general itching of the whole surface of the body, but more especially of the face; and conducted herself like a person slightly intoxicated. Her mother, ignorant of the cause of these indications, had regarded them simply as the effects of bad humour, and reproved her accordingly. To these succeeded flushed countenance, wildness of manner, suffused eyes, maniacal expression, ineffectual efforts to vomit, incoherent and rapid utterance, which very soon became wholly unintelligible; screaming, catching at imaginary objects in the air, or rather striking at them—for it was evident that these spectra were of a frightful nature, since, at the moment of darting out the hand in the direction where the eyes were fixed, she always suddenly, and with great vehemence, withdrew herself, expressed the utmost terror in her look, and then hid her face; at the same time screaming and sobbing violently. Her eye would, to appearance, follow the imaginary object for a moment or two, before she made the effort to escape from its supposed approach. She rapidly became furiously delirious, struck at, pinched, or attempted to *bite*, every person who came near, or any object that was offered to her.

By half-past two o'clock—*i. e.* within the space of two hours and a half from the time that she must have swallowed the poison—the child had not only lost the power of utterance, but that of voice also. She could now only utter a hoarse croaking sound, alternated with a sonorous, croupy, barking cough; and was unable to swallow, in consequence of the violent spasm which affected the muscles of deglutition*

* This symptom, conjoined with those enumerated, excited in my mind apprehensions of hydrophobia; until the matter ejected from the stomach by vomiting removed all doubt of their cause.

when she made the effort. This state of spasm, judging from the nature of the cough and the croupy character of the inspirations, pervaded also the muscles of the larynx. She now knew no person, and had been wholly insensible to surrounding objects for above an hour and a half. The pupils were dilated; had been so from the first, and continued in this state till she died. The voluntary power of the extremities was gone, and the limbs were violently agitated by spasmodic twitching and jactitation (not by regular convulsions), alternately with short paroxysms of tetanic spasm (opisthotonos).

Notwithstanding all this active excitement, accompanied with a hot and perspiring skin on the surface of the trunk, and flushed (slightly swollen) face, the pulse was almost imperceptible from the first; but, as far as it could be felt, it was natural in regard to velocity, and the inferior extremities were cold. Neither was there apparently any active determination of blood to the brain, if we may estimate this from the state of the anterior fontanelle, which was neither tense, hot, nor in the slightest degree raised by the cerebral pulsations: these, on the contrary, were scarcely perceptible.

In this condition, the severity of the symptoms undergoing occasional remissions of a few minutes' duration, she remained for about three hours, when a stage of coma supervened, but she did not sleep, though, at first, somewhat so disposed. She still continued to be affected with convulsive twitching and jactitation of the limbs, alternated with short paroxysms of rapid, vibratory, spasmodic motions, of the hands and forearms; of a peculiar, though, I believe, diagnostic nature, as regards the effects produced by poisons of this class. The muscles of the face were never affected by spasm, nor the expression of the countenance contorted in the slightest degree, during the whole course of the operation of the poison.

The comatose stage lasted about two hours: like the former, it was attended with incapability of swallowing; but evidently the cause was of a totally opposite nature to that which had produced the same symptom in the first stage. It was now decidedly the result of atony, or paralysis of those parts that had been formerly affected with spasm. A slightly stertorous state of the breathing indicated that a similar change had taken place in the muscles of the larynx. During the continuance of the coma, the pulse returned: it was uncountably quick, and estimated to exceed 200, small, sharp, and thready; the respiration was extremely hurried, averaging about 100 in a minute: each inspiration, however, completely filled the lungs. A tympanitic state of the bowels now proclaimed itself: the belly became extremely tense, and, in consequence, prevented me detecting another symptom that manifested itself on examining the body after death, viz. paralysis of the bladder, and consequent incontinence of urine from repletion of this viscus. It need hardly be added, that the evacuations were passed unconsciously, which added to the difficulty of detecting this symptom. At one o'clock in the morning there was a return of excitement, but not so severe as that which first presented itself; neither was it attended by ocular spectra or tetanic spasm: the respiration at one time exceeded 140 in a minute. At eight o'clock on the Sunday morning she again became comparatively tranquil, and began to manifest symptoms of exhaustion, but was still affected with frequent twitching, and the vibratory motions already described. In this state she continued, gradually becoming weaker, till mid-day, when she expired, exactly twenty-four hours from the time of swallowing the seeds.

Treatment.—As soon as it was surmised that the child had swallowed something of a deleterious nature, an emetic of ipecacuanha and tartrate of antimony was administered, or rather forced down the throat; but this not appearing to be sufficiently powerful, it was followed up by one of sulphate of zinc. Such, however, was the effect of the poison on the sensibility of the stomach, that repeated doses of both these emetics were given before vomiting could be produced. The state of spasm, already alluded to, in the pharynx, likewise impeded materially a full ejection of the contents of the stomach; and, together with the age of the child, and the insoluble nature of the substance swallowed, rendered recourse to the stomach-pump unadvisable. In the course of a couple of hours, upwards of twenty seeds were dislodged; and as it was not probable that many more had been swallowed, and the efforts to vomit

were on the decline, a large dose of castor oil was forced down the throat, and an enema injected into the rectum. Both these remedies were several times repeated, and doses of calomel and jalap likewise administered, before the bowels, which appeared to be equally as torpid as the stomach, could be moved. About eight o'clock in the evening the means began to take effect, and in the course of the night upwards of eighty more seeds were discharged by stool; the child also vomited repeatedly, but brought off no mere seeds from the stomach.

During the comatose state, cloths dipped in cold water were applied to the head, and ten leeches to the temples; the child was also immersed in a warm-bath. Dr. Thomson suggested that about a scruple of calcined magnesia and four drops of liquor potassæ should be given every half hour, on the presumption that it might neutralize the specific operation of the poison; but nothing appeared to have the least influence in mitigating the symptoms.

Post-mortem inspection.—The natural appearance of the body externally was not at all changed; the countenance remained placid; the limbs more supple and pliant than usual; abdomen considerably swollen, tense, and tympanitic.

The scalp, when divided, was very exsanguineous: dura mater unusually adherent; arachnoid membrane, perfectly transparent, somewhat more adherent to the pia mater than common, but not morbidly so; pia mater natural in every respect.

A medullary section of the brain might be said to present rather more red points than usual; this was observed more particularly on the left side, but not sufficiently to admit of being regarded as a morbid appearance. No effusion in the ventricles.

The blood was found to be semi-fluid throughout the body; the few coagula that were met with in the auricles of the heart and large veins were very feebly formed, and easily broken down.

The medulla oblongata was divided *very low down*, so as to afford an opportunity of judging of the condition of the spinal marrow, but nothing particular presented itself to notice.

The lungs were natural; the left ventricles of the heart were found empty; the parietes of the left side very hard, and powerfully contracted; no coagula in the right.

A slight unusual blush pervaded the pharynx and œsophagus to about one-third their extent; but a very distinct band of vascularity, about half an inch broad, was formed at the junction of the tube with the pharynx; the larynx was similarly injected, but not quite in so marked a degree; the rima glottidis was thickened, and very turgid.

The gall-bladder was distended; bile had transuded, and was effused on the intestines. The stomach and intestines presented an extremely healthy appearance throughout; the peritoneal surface was rather paler than usual. *Not a single seed was found in the whole extent of the canal.* There was one slight invagination of the jejunum, about half an inch in extent. The bladder was distended with urine.

The only appearances, then, meriting the appellation of morbid, were those detected in the pharynx and larynx, and extending to the tubes proceeding from these.

The operation of this poison, then, it is clear, is confined principally to the nervous system. In the primary stage of excitement there may be some slight degree of increased vascular action; and in that of coma there may exist a state of congestion; but in neither condition is the degree of these respectively at all equivalent to the phenomena manifested. They are, in fact, merely secondary; a natural result of the two opposite conditions of the nervous system, to which they are referable. They should not then form the main point of treatment. Hence blood-letting, though insisted on*, should be sparingly and cautiously had recourse to. The first object, undoubtedly, is to clear the stomach and bowels of the poisonous ingesta; and the second is to neutralize, were it possible, the specific influence of the poison. The strength of the individual should be at the same time supported, as the subsequent exhaustion, resulting from the violent shock sustained by the nervous powers, is excessive.

Two cases, both children, illustrating the effects of an over-dose of this drug, are recorded in the fifth volume of the Edinburgh Medical Commentaries, by Mr. Thomas Fowler. In neither did

* *Vide* Christison's Treatise on Poisons.

fatal consequences ensue; although in one, a child six years of age, one drachm and a half of the seeds was swallowed. As Mr. Fowler states that the children picked the thorn apples themselves, it is probable that the seeds were not so matured as those swallowed by the subject of the foregoing remarks. Besides there is a material difference in the ages of the two patients, and it is not unlikely that an equal disparity in constitutional powers may also have existed. Our little patient was a very delicate child: Mr. Fowler states that his patient possessed a strong and healthy constitution.—I am, sir,

Your obedient servant,
E. W. Duffin, M.R.C.S.

3, Foley-Place.

MEDICAL GAZETTE.

Saturday, Nov. 8, 1834.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

Cicero.

NEW REGULATIONS of the COLLEGE OF SURGEONS.

We last week inserted the forms of several returns required to be made to the College of Surgeons, both by teachers and pupils. Of these new regulations it is to be expected that very different views will be taken. To us the object in view, viz. that of rendering it more difficult to procure false certificates, appears to be good; but the machinery for carrying this into effect is in various respects faulty.

Of the motives which have induced the Council of the Royal College to issue the documents in question at this particular moment, we can only speak conjecturally, but we strongly suspect they had reason to anticipate that some such regulations would be recommended in the report of the Parliamentary Committee, and thus determined to take time by the fore-lock. If this be not the secret spring which moved them, they must be looked upon as following in the wake of the Society of Apothecaries, but with the determination to outstrip them in the strictness and rigour of their "registration."

That pupils intending to become members of the College of Surgeons should enter their names, and produce evidence of their previous education, may be very proper; at the same time we must say, that it is somewhat of the latest to issue this regulation a month after the winter courses have begun, and then to add, that "credit will be given for attendance on hospital practice, or lectures, in London, only from the date of such registry." This would entail so great a hardship, and be so palpable an injustice, that it is obvious it cannot possibly be insisted on.

That hospital surgeons and teachers should make a return, at stated times, of those who are attending their practice or lectures, may be reasonable; but we must protest against the column for "remarks as to attendance, absence, &c." Whatever is done, let it be done openly, but let nothing be admitted that bears the least appearance of espionage. Let pupils put down their names in the lecture-room every time they attend, or let the names even be called over, or let any more eligible mode be adopted which is open and above-board, of ascertaining the actual presence of the pupils at the lectures of their respective teachers; but let not any room exist for suspicion and distrust between them and their instructors.

The number of false certificates which we know were granted *(and we could give the names if necessary)*, has rendered some regulations calculated to meet the evil almost imperative; but those which have been issued are complicated, will prove excessively troublesome, and we confidently anticipate will require to be modified.

ST. BARTHOLOMEW'S—MIDWIFERY LECTURES.

It was not our intention to have alluded to the unpleasant dispute which has occurred at St. Bartholomew's between the lecturer on Midwifery and his class; but as the same reserve has not been observed by others, we shall make a few remarks, which we hope may not be altogether useless.

In the first place, we have to state that the surmise of our contemporary, that Dr. Ashburner purchased the chair, is entirely erroneous. That a treaty was on foot with another physician, by which "a consideration" was to have been given, we are aware; but this proceeding was very properly put a stop to by the medical officers of the hospital, by whom the appointment was conferred on the present lecturer. Another insinuation against Dr. Ashburner, proceeding from the same respectable quarter, and evidently with a view of making the question a party one, is, that the gentleman above named is in some manner connected with this journal. Now both what is expressed and what is implied in this respect are utterly false, he neither having, nor ever having had, any connexion with the journal, directly or indirectly.

If it were asked why we take up this matter at all, we answer, because we think Dr. Ashburner has been somewhat harshly dealt with; and we would therefore appeal to the better feelings of his class, to let him have another trial. From Dr. Ashburner we have derived no part whatever of our information, because we should regard his representations as necessarily *ex parte;* but we have from other sources made ourselves acquainted with the facts, and have gathered what follows.

The treaty above alluded to having been set aside, the chair was conferred by the medical officers on the present occupant, who, with several others, had applied for it. Now Dr. Ashburner is regarded by competent judges as a talented and well-informed man; and it is supposed that if he had continued to lecture in the manner he had for several years done at St. Thomas's Hospital, he would have met with no opposition. Unfortunately, however, he thought himself called upon to improve his course, with a view of rendering it more worthy of his new and more numerous audience; and in doing this over-anxiously, consisted his error. We are informed that he introduced too many refinements from the German and other continental writers, with a certain quaintness, not to say pedantry, in his language, and we suppose a few little *crotchets* of his own. Now we have all known a midwifery lecturer do those very things, and yet succeed in making himself very popular, and very deservedly so: but then to effect this requires a manner corresponding to the matter—a quickness, and a self-possession, and a confidence, which Dr. Ashburner wants. Had he been less diffident, he would probably have been more successful. But it is added, that though his introductory lecture was listened to with approbation, yet that he had not proceeded half through the second one, before such opposition was manifested as appeared to result from a preconcerted cabal, and which has gone on increasing ever since. Had Dr. Ashburner now appealed to the generosity of his class to give him a fair hearing, and had he expressed an intention to recast his lectures in the simple but comprehensive mould, suited to the taste of his intelligent audience, we cannot for a moment doubt that he would have been patiently heard. Instead of this, however, the Doctor was so very ill-advised as to take up the matter in high

dudgeon, and to talk of legal measures and punishment!! Of course this speedily brought things to a climax: no set of young men could be expected to tolerate such a threat; and a regular O. P. row being contemplated, the lectures were suspended.

Under these circumstances, Dr. Locock has very good naturedly undertaken to conduct the course *pro tempore*, and has been very favourably received. We most earnestly recommend, therefore, that Dr. Ashburner do run his pen through all his little quaint refinements (which we have no doubt he thinks the very best parts of his lectures), and that he renounce all appeal to law, or any tribunal except that of his own class; while to the gentlemen who are his pupils we say, do not suffer yourselves to become puppets, moved as Mr. Wakley chooses to pull the strings; do not let him mislead you into the idea that it is a fine manly thing to put down and inflict a serious injury upon any one—much less a member of your own profession:—the time may come when you yourselves may know what it is to ask in vain for a fair hearing and a candid auditory.

ST. GEORGE'S HOSPITAL ELECTION.

So long as the contest for the newly-created offices of Assistant-Physician and Assistant-Surgeon was pending, we avoided any reference to the subject which could affect the interests of either party. Now that it is over, we take the opportunity to express our regret that any set of men should have suffered themselves to be carried by the excitement of a canvass so very far beyond the bounds of propriety as some have been on this occasion. The tissue of falsehoods, not less malignant than absurd, which week after week appeared in the Lancet, and the crowning specimen of vulgar abuse which was transmitted to the Morning Chronicle a few days ago, have alike contributed to disgust all candid and honourable men, and to injure, in an irreparable manner, the parties they were intended to serve. The letter from the Physicians and Surgeons of the hospital, and that of Sir Benjamin Brodie, which we subjoin, render any further allusion to the subject unnecessary.

RESULT OF THE POLL.

For Assistant Physician.

Dr. Hope	158
Dr. Dunlap.....	89
Majority	69

For Assistant Surgeon.

Mr. Cutler	178
Mr. Lane.....	98
Mr. Palmer.....	23
Majority.....	80

LETTER OF THE PHYSICIANS AND SURGEONS.

To the Governors of St. George's Hospital.

My Lords and Gentlemen,—We, the undersigned Physicians and Surgeons of St. George's Hospital, beg leave very respectfully to address you on the subject of the approaching election.

We perceive with much regret that a systematic and continued effort has been made, both through the medium of the daily press, and by the verbal circulation of unfounded reports, to misrepresent the facts, and to mislead the Governors as to the considerations which led to the appointment of another Assistant-Surgeon being proposed; and as to the motives which have influenced us in the disposal of our individual votes.

With respect to the first point, we have simply to state, that on the Hospital being enlarged, it appeared to us that the welfare and comfort of the patients would be better and more efficiently attended to, if the additional duties were assigned to a responsible officer, appointed by you, than if they were met by calling in, when required, the farther assistance of dressers and other pupils, in the manner practised in those establishments where the surgical staff bears a smaller proportion to the number of patients than it does at St. George's.

The Physicians and Surgeons of the Hospital can gain no personal advantage by increasing the number of officers: indeed, it is generally considered that the fewer the medical men that are attached to a public institution, the more may such appointments be made to serve the purposes of those who hold them. But this was not regarded by them as an adequate reason for declining to recommend an appointment which appeared to be otherwise desirable; and accordingly the question has been decided in the affirmative by large majorities (in the last instance, by more than four to one), at two of the most numerous meetings of Governors which have been convened for many years.

But dishonourable motives have been attributed to us in the selection of the candidate whom we support. In a gross and unwarrantable attack upon our colleague, Sir Benjamin Brodie, in the *Morning Chronicle* of yesterday, he is represented as having used undue influence to induce us to vote for his "private assistant," Mr. Cutler, in preference to another gentleman who is asserted to be more deserving. This allegation is absolutely untrue. With regard to the circumstance of one of the candidates having been what is called Sir Benjamin Brodie's "private assistant," the Governors must be well aware that every surgeon in extensive practice requires to have some younger surgeon to afford him occasional assistance; and that Mr. Cutler happens to be one of several who have done so, cannot, we apprehend, be fairly regarded as discreditable to him; nor can it well be urged that the experience he has thus acquired renders him less fit to be assistant-surgeon to a public institution. As to the rest, Mr. Cutler is, as a pupil, senior by several years to the other candidates; and the undersigned have promised to vote for him solely and exclusively because in their opinion the interests of the charity would be best served by his election.

The advocates of Mr. Lane, the junior of all the present Candidates, adduce as a claim in his behalf that he has established a School of Anatomy adjoining the Hospital; but it is to be kept in mind that this was a private speculation of his own, intended to bring,—and which has brought him, a profitable return. Besides, if the principle thus advocated be admitted, then would the patronage of the Hospital pass at once from the hands of the Governors into those of the proprietors of the School in question, over which no control is possessed, and which might at any time be made the object of sale and barter.

We feel assured you will do us the justice to acknowledge, that neither on this, nor any other occasion, have we endeavoured to bias your opinion of Candidates in any unfair manner, or presumed to interfere with the absolute freedom of your choice; but the unusual circumstances which have attended the present contest, and the extraordinary and lamentable extent to which misrepresentation has been carried, have rendered it a duty to you, to our colleague, and to ourselves, to enter into the above explanation.

We have the honour to be,
My Lords and Gentlemen,
Your most obedient humble Servants,

W. F. Chambers,
Edward Seymour,
Roderick Macleod,
} *Physicians.*

Robert Keate,
Cæsar Hawkins,
G. G. Babington,
} *Surgeons.*

St. George's Hospital,
Nov. 5, 1834.

SIR BENJAMIN BRODIE'S LETTER.

To the Editor of the Morning Chronicle.

14, Saville-Row, Nov. 4, 1834.

Sir,—I have seen in *The Morning Chronicle* of this day an article under the head of "St. George's Hospital," which has evidently been furnished by certain individuals who believe that, in some late transactions at that institution, their interests have not been sufficiently consulted by my colleagues and myself. As the observations there made relate especially to my conduct, and are calculated to affect my character, I feel myself called upon to request of you, as an act of justice, to lay before the public the following statement, which will, I trust, be considered as a sufficient answer to the charges which your anonymous correspondent has brought against me.

The old building of St. George's Hospital contained beds for 210 patients. The regular surgical establishment consisted of four surgeons, and of one, and afterwards of two, house-surgeons; assistant-surgeons were appointed according to circumstances; sometimes there were two, sometimes one, and sometimes none at all. For many years Mr. Keate and myself, and afterwards myself and the late Mr. Ewbank, were joint assistant-surgeons; and I must say that during the whole of that period, being daily at our posts, and anxious to be employed by any one who wanted us, we found abundance of occupation in attending to those matters to which the principal surgeons could not attend themselves. Many of the existing governors will, I am confident, bear witness to the fact that the business of the hospital was at that time well-conducted, and that no one ever found occasion to complain that the sur-

gical establishment of it was greater than it needed to be.

In the year 1828, an influential governor, on the suggestion of the surgeons, proposed that an assistant-surgeon should form a part of the permanent establishment of the hospital. It was a question whether he should propose the appointment of two assistant-surgeons, or only of one; but the surgeons recommended that the application for a second assistant-surgeon should be deferred until the building of the new hospital was completed. That time is now arrived. We have at this moment an hospital capable of containing 330 beds, and there is good reason to believe that it will not be long before the benevolence of the public will furnish the institution with the means of having the whole of it occupied with patients. Under these circumstances, the surgeons some months ago recommended to the governors the appointment of a second assistant-surgeon. The subject was discussed at two of the largest assemblies of the governors which were ever held. The arguments in favour of the appointment were then fully stated. The only arguments against it were those urged by Mr. Walker, the present assistant-surgeon, which amounted to little more than this—that at this time he had a monopoly of the office, and that the creation of another assistant-surgeon would, in some way or another, be contrary to what he supposed to be his individual interests. The result was, that at the first meeting the recommendation of the surgeons was adopted by a very large majority, and that, at the second meeting, the resolution was confirmed by a majority larger still.

The present surgical establishment of the hospital, then, consists of four principal surgeons, two assistant-surgeons, and two house-surgeons, the latter being selected from the senior and more intelligent students; and I am satisfied that the two assistant-surgeons, if they are as anxious to be employed as Mr. Keate and myself were in the early part of our career, will not fail to discover the means of being so, to the advantage both of the patients and of themselves. It is untrue that our surgical establishment is larger than that of any other hospital. At the London Hospital, which is probably of the same size as St. George's, there are three principal surgeons, three assistant surgeons, and house-surgeons also. At St. Bartholomew's Hospital, which contains 500 beds, there are three principal surgeons, three assistant-surgeons, and three house-surgeons. But those who there are designated as house-surgeons, are required to have completed their education, and must be members of the College of Surgeons; and in addition to these there is a number of dressers, who perform the same duties, and are supposed to have the same qualifications, as our house-surgeons.

So much in answer to one part of your correspondent's statement. But he goes on to represent that I am using my influence with the governors to procure the election of Mr. Cutler, whom he describes as my private assistant, to the injury of a more deserving candidate, Mr. Lane; and I may observe, that here it is somewhat remarkable that he takes no notice of a third candidate, Mr. Palmer, a gentleman highly respected by the profession, and whose claims and qualifications are at least equal to Mr. Lane's.

Now with respect to Mr. Cutler, it is quite true that he is one of several young men, of whose assistance I have occasionally availed myself in my private practice, and that I have been led thus to employ him, on the whole, more than any one else. But it is also true that he is a much senior pupil of the hospital to any of the other candidates; and that, since he first became a pupil, with the exception of one short period, he has been engaged in a constant diligent attendance on the hospital practice. That I am not disposed to show him any improper preference is proved by this circumstance, that, in the year 1830, when there was a vacancy in the office of assistant-surgeon, I refused to give him my support as a candidate, and joined with my colleagues in supporting Mr. Walker, whose claims seemed to be at that time superior to his. But now Mr. Cutler's claims are, in the estimation of the other surgeons and myself, superior to those of his competitors; and is it to be supposed that, being satisfied, as I am, that he is the individual best qualified for the office, I am to refuse him my support, merely because I have had so high an opinion of his professional qualifications and moral integrity, as to be induced to avail myself of his assistance on various important occasions in my private practice? To say nothing of its absurdity and inconsistency, would not such conduct render me liable to the charge of having been guilty not only of gross injustice towards Mr. Cutler, but of a breach of faith with those governors who, in the affairs of the hospital, are pleased to honour me with their confidence?

I am, sir, your obedient servant,

B. C. Brodie.

PAUPERS AND PARISH SURGEONS.

An inquest was held this week on a poor burnt child, who was lost for want of timely medical assistance: a sad reflection, that such things can happen in this, the first city of the empire! We

do not believe that the parish surgeon was to blame in this case: in the multiplicity of his engagements he could not attend sooner than he did; but that was some hours after he could have been of any use: the patient was dead. Some observations on the present system of supplying the medical wants of the poorer classes, we are obliged to defer till next week.

CLINICAL LECTURE

ON

WOUNDED ARTERIES OF THE FORE-ARM.

Delivered at the Middlesex Hospital, October 25, 1834,

By Sir Charles Bell.

I beg your attention to-day to certain cases of wounded arteries; than which there cannot be a subject more deserving your serious study: for you must perceive that the necessity of acting, and that promptly, in such cases, comes upon you most unexpectedly; that in a scene of bustle and alarm, where every one is flying to render unavailing assistance, you are required to be calm and yet decided. Now this decision, you must know well, can only be attained by previous study and much reflection — by anticipating every possible occurrence, and having learned the rule of practice. Another very important reason for attending to this subject is, that your hand, as an operating surgeon, is positively arrested until you are familiar with these cases; you can perform no great operation unless you know thoroughly well how to stop hæmorrhage and how to take up arteries. Here, allow me to say, you must err, unless you have combined the aphorism or rule of practice with a minute knowledge of the anatomy.

The education of our assistants, the house surgeon and assistant house surgeon, and I may say the surgeons in private practice in the neighbourhood of this hospital, deprive you, in a manner, of the opportunities of studying this subject; for you know, I presume, that bad surgery makes a better ground for a clinical lecture than correct practice. Distressing cases of wounded arteries do not come before you, because our young men are anatomists and diligent students, and they not only know what to do, but how and when to act. With the cases that I am now to place before you, you may contrast many that are upon record; and of these you will find an abundance in my brother's works. In that great work (which if you have not perused, you know little of the interest which your profession is capable of exciting) you will read of the horrors which are consequent on ignorance of anatomy and of timid conduct, or of ill-advised operations; where principles have been lost sight of, or rather, we should say, never learned. When an artery has been wounded, where the surgeon has been ignorant of the anatomy—where he has, therefore, been all abroad as to what to do—where ineffectual compression has been used, and consequently the blood has been driven into the cellular membrane—a most distressing and difficult case is presented, even to the most intelligent and active surgeon: for with the ineffectual operations and pain the inflammation rises, and the cellular tissue is injected with serum, in addition to blood; so that at last, when the patient presents himself to the surgeon, there is unusual difficulty in detecting the bleeding orifice of the artery. He is not directed by the general form of the member, for it is enormously swollen, and quite changed from its natural appearance; and while he has to dissect deep, he must make his incisions through a substance with which he is scarcely acquainted, and where it is particularly difficult to ascertain the distinction of parts. Knowing this confusion of parts to present frequently to the practitioner, was the reason why, when I taught anatomy, I was particularly attentive to point out the relation of the artery to those points of bones and to the tendons, which are distinct in every condition of the limb; because, in cutting into the substance, you can ascertain, for example, the course of the extensors of the thumb, the pisiforme bone, the edge of the flexor carpi ulnaris, the prominence of the point of the radius, where the general form of the arm is so changed as to afford no direction. In studying the arteries, therefore, you must be particularly careful to mark those points, which are as beacons amidst the obscurity of the parts. Having dissected the arm, you might well say, "I know where the artery runs by looking at the outward shape of the limb." But in such a condition of the parts as I have described the shape is altered, and your only directors are such points as may be ascertained in the utmost confusion of injected cellular membrane, and which will always conduct you to the course of the artery.

Another prefatory observation is, that in consequence of the aphorisms of practice being established, you have none of the difficulties to contend with that they had who have preceded you; and therefore you ought to feel grateful to those who have laboured so effectually to establish the right rule of practice.

Before proceeding to lay cases before

you, I would remind you of the anatomy and physiology of the artery. This may be best done by asking you if you are aware of what is the cause of the spontaneous stemming of blood when a vessel is opened? An artery being divided, retracts: this *retraction* is an important circumstance, mechanically considered, because the blood does not escape from it until the artery is stretched to its former condition; for when an artery is retracted, part of the heart's force is employed in the extension of the artery, instead of throwing the blood from it. Joined to the retraction, you will of necessity have *contraction* of the mouth of the artery. Take an opportunity, the first amputation that is performed above, of looking into the limb so amputated; put your finger upon the orifice of the divided artery (it is not necessary to place your finger on the stump of the patient, but on the surface of the amputated member), and you will find that the firmness of the artery will enable you to distinguish it blindfold; and on looking at the divided mouth, you will perceive that it is extremely small indeed. Thus one essential condition of an artery which has ceased to bleed spontaneously, is its retraction and contraction. But you will not arrive at a just conclusion unless, to these mechanical obstructions to the flow of blood, you take into consideration another and more important one; which arises from the life of the part. There is a relation established between the blood and the vessel conveying it: through the influence of the living vessel the blood is kept liquid, and only coagulates when that influence is withdrawn —whether by the death of the artery, by the injury to it, by pinching or twisting, or the laceration of it.

I believe I had better not pursue these prefatory remarks farther, but rather take up the cases before me and give you instances, as more likely to make an impression on your minds than any such general observations.

Sir Charles then read, from the house-surgeon's case-book, this case of

Puncture of the Radial Artery.

"Charles Bartlett, æt. 21, a shoe-maker, came to the surgery, with a wound almost exactly in the middle of the fleshy part of the fore-arm, about half an inch in length, rather towards the ulnar side of the arm, apparently not in the direction of either artery. The lips were nearly adherent, but on pressing on the sides of the cut a little clotted blood escaped: it appeared, however, of slight importance. The patient was told to go home, to poultice the wound for a night, and return the next day to have it properly dressed. However, about eleven o'clock at night he returned, having lost four or five ounces of blood; but the hæmorrhage had been stopped by a tight bandage. We now questioned him more particularly about the history of this accident, and it appeared that he had received the wound three days ago, by a sharp-pointed knife having been thrown at him in a *lark*"—(I hope this is the patient's expression, not the taste of the narrator); "that he had lost much blood at the time, and had gone to a chemist's, who strapped it up, wound and stopped it; that on the two following days the bleeding had burst out afresh, and been stopped in a similar manner; and that the chemist now told him there was a large vessel wounded, which it would be necessary to cut down upon and tie. On undoing the bandage, a small stream of arterial blood flowed from the wound; the wound was enlarged by a longitudinal incision; the blood appeared now to come from above and below, in a more considerable stream, and seemed as if it came from the interosseal artery, yet no wound ran between the bones. Some coagulated blood was now pressed out, from a deep part of the wound next the radius. The blood then came in large quantities, and evidently from the bottom of this wound, which led in a direction towards the radial artery; it was easily stopped by pressure on this artery above and below the part wounded. The external edge of the wound being more than an inch from the artery, it was found necessary to make a regular dissection for the vessel. He was therefore put to bed, to await the visit of the surgeon next day, a compress being placed on the artery above and below the wound, which completely commanded the hæmorrhage.

"When the surgeon saw him, he would scarcely believe that it was the radial artery, and not the ulnar artery, that was wounded; the latter seemed, from the direction of the wound, so much the more likely to have been injured. The compresses were removed, but no blood flowed. He desired that the arm should be kept raised, a cold lotion applied, and that he should be sent for if the hæmorrhage returned. None appeared till four o'clock, when it again burst out. The tourniquet was put on, and the surgeon sent for. He having convinced himself that it came from the radial artery, cut directly down upon the artery, and connected his incision with the wound. The two flaps thus formed were turned back, and, after a little careful dissection, the artery was exposed, and the nature of the wound in it proved just such as was anticipated. It was punctured in such a manner as to divide one-third of the circumference, and the retraction of the elastic coat, and the

contraction of the muscular fibres, gave it exactly the appearance of having had a piece cut out. The tourniquet was now removed, and the vessel compressed above and below. The artery was divided at the puncture, and both ends tied at the distance of a few lines from the ends. The parts near the wound had been too much exposed and separated from the surrounding parts by the dissection and the injection of the cellular membrane. The wound was dressed; in five or six days both ligatures came away, and the wound soon healed by granulation."

(1.) This is a case coming the nearest of all to such as I have described, where mischief has been occasioned by imperfect compression; and I offer you the following remarks upon it:—

First, "the blood came from above and below." That to you, as anatomists, will not appear remarkable, when you recollect the free inosculations between the radial and ulnar arteries, through the superficial and deep-seated palmar arches: but it has been imagined necessary that the anatomist should trace the inosculations, to account for the blood returning so freely from the lower part of the artery of a limb. Not at all; in the flesh of the thigh, the shoulder, the arm, and indeed every where, there are sufficient small vessels—vessels which are exceedingly active, capable of high excitement and increased activity—to account for the flow of blood from the lower orifice; which, indeed, takes place, in certain circumstances, from all arteries, wherever divided. It has been stated in some of our books, which, in other respects, are excellent authority, that it is only necessary to take up an artery in the arm, for example, above the wounded part; but in this case you perceive that there was an immediate necessity for tying the artery above and below the wound. Even if the lower extremity does not bleed, yet, if you take up the artery only above, you are almost certain to be called to a secondary hæmorrhage; and there is such a welling of blood from the wound, that you have difficulty in deciding whether it comes from the failure of your ligature or from the lower part of the artery, and you are under the necessity of putting down a compress most probably within the wound, thereby occasioning great inflammation, tumefaction, and a tedious cure; all of which may be avoided by taking up first one end of the artery and then the other, so that there is nothing left in the wound but thread, and no particular excitement.

(2.) My next observation is, that when an artery is punctured and does not bleed, as was the case here, it is exactly what you are to expect. You are called to a patient who has suffered suddenly by hæmorrhage—perhaps blanched by loss of blood; you ascertain by this circumstance that a vessel has been actually wounded, but now it does not bleed. You are thrown off your guard, you go away, and you receive a second hurried message that there is another hæmorrhage. What then is to be done, when, from the circumstances of the case, the direction of the wound, the quantity of blood lost, you think the artery must have been struck, and yet the vessel does not bleed? One thing you ought always to try—and that is, to compress below the orifice, that is to say, more remote from the heart; and if the vessel have been only wounded in the side, or punctured, you will, in all probability, find that the hæmorrhage recurs—that the blood being prevented from going down the artery freely, passes out by the wound.

(3.) You must also consider whether there is any thing in the position of the limb. If a man be engaged in a struggle, and the point of the knife enters through certain muscles, the moment the arm is changed in position all these surfaces shift and lie over the wound, and the tract of the wound becomes oblique and irregular; so that a coagulum is found in the interstices of the part and around the artery. It is well sometimes to study the position of the part when wounded—to place the limb in that position by which you ascertain the tract of the wound through the several parts, and leave the passage free for the exit of the blood.

4. There is another circumstance, not to be explained on mechanical principles. An artery bleeding stops from exhaustion, and after a time the hæmorrhage again returns. I do not pretend to explain it, but such is the fact, that there is an impulse, an excited action, in the artery to resume the circulation; and sometimes this is marked by pain in the part. I have sat watching a patient, and known when to bestir myself and put my finger on the compress, from the pain striking down the limb; the pain producing an increased activity of the vessels, and that being the harbinger of a new breaking out of the hæmorrhage. Thus it seems to be a law, that a vessel having exhausted itself, shall after a time recover and resume its hæmorrhagic action. These are the circumstances that throw you off your guard, and sometimes induce you to leave a patient when he is in imminent danger of a return of hæmorrhage.

5. The next observation upon this case is very important. You will observe that the incision to find the vessel was made in connexion with the wound. That practice is quite correct, because we know very well that we have cases on record where

the surgeon has trusted entirely to his knowledge of anatomy, and has said, "I see where the artery has been wounded, I will cut down upon it;" whereas he has cut down upon the side of the vessel not wounded, and therefore has not discovered the puncture, and much unnecessary dissection, unnecessary pain, and destruction of the parts, have been the consequence. Trust to anatomy as much as you may, dissect for the artery according to your knowledge of the parts, but take the assistance of the wound itself. Either pass a probe, or your finger, through the wound, and make the incision to communicate with it; so that when the artery bleeds, it will pour the blood into the wound formed by the incision, and you will have less difficulty in ascertaining the point whence it proceeds.

6. The next observation is upon a very important and curious point: the artery appeared as if a piece were cut out. This explains why an artery does not heal. When an artery is struck, it contracts in one way, and retracts in the other; that is to say, the elasticity of the parts causes retraction, and muscular action induces contraction, so that the wound gapes; and it has no tendency to heal, because the edges are turned out. This I have seen in a way in which I could not be mistaken. When the artery of the arm has been wounded with the point of a lancet, I have seen it appear as if it were torn largely; and so the narrator states here, that it appeared "as if a portion had been cut out of the artery."

The artery was divided, and both ends taken up with a tenaculum; that is the easiest and the best way. By this means you avoid diving with the aneurismal needle, and the danger of passing it across the ulnar nerve, if it be the ulnar artery on which you are operating. If the vessel be only wounded at the side, I think the best plan is to divide it altogether, to pick up one end and tie it neatly, and then pick up the other.

The second case is that of

Division of the Ulnar Artery.

"Ellis Hayward, æt. 36, came to the hospital with a gash across the wrist, made by a piece of sheet iron falling upon it. It had bled profusely, but that had been soon stopped by winding a piece of broad tape tightly around the arm. He was faint from the sudden loss of blood, though it appeared that he had not lost much. When the bandage was removed no blood flowed, though the cut crossed the course of both arteries. The radial artery was seen distinctly pulsating in the wound, but was uninjured; the ulnar was completely divided; both ends were distinctly visible in the wound. The extremities were not involved in any clot, but were pulsating strongly, and considerably retracted, and so contracted, that not the slightest aperture was visible in their centre, nor a drop of blood flowing from them. Meanwhile a little artery of the skin was pumping away from the lower lip of the wound. The ends of the divided artery were very easily distinguished by the touch from the divided tendons and nerve. The two ends were then separately transfixed with the tenaculum, and tied, the wound dressed, and a splint and bandage put on the arm to keep the wrist slightly bent. He was sent to bed, and the arm kept wet with cold lotion. In the evening he was flushed and feverish, with a strong frequent pulse, and much headache.

"He was ordered a dose of calomel, and the Haust. Salin. c. Magnes. Sulph. 3iss. et Vino Ant. gtt. xxx. 4tis horis.

"Sept. 13th.—In the morning he was still very feverish, the headache severe, and pulse very strong. He was therefore bled to eight ounces, which relieved him. The bowels were opened, and the medicine continued. In the evening he became more flushed and feverish, and the medicine was ordered to be continued every two hours.

"14th.—He was much better; purged; the wound uniting by granulations; the ligatures twisted; compresses and splint reapplied. Fever again in the evening.

"15th.—In spite of care to prevent any matter being confined, a little pus can be squeezed out of the wound, and there is a slight blush around the wound; the fever, however, is less. He is a great deal reduced by purging and antimonials; no headache.

"16th.—Slept well; much better; more pus in the wound; restrictive compresses necessary above the wound, and very light dressing; only sufficient bandage to fix the splint.

"17th.—Both ligatures came away today, being the fifth day; both have been regularly twisted at each dressing. Half-diet and porter.

"18th.—Tendon of the flexor carpi ulnaris, and palmaris longus, sloughy.

"19th.—Made an out-patient."

1. The first point to which I would call your attention in this case, is the retracted and contracted condition of the artery, and the hæmorrhage not recurring. You will distinguish this case from the next, for here the artery was cut across by a piece of sheet-iron, which I suppose had not a very sharp edge. You will always find, that if an artery be touched with a lancet, or opened by a spicula of glass, the injury being less, it bleeds more freely than if it

be divided by a coarse instrument. In the latter case the contraction and retraction is greater, as well as the general injury to the coats of the artery; and the disposition to form coagulum is greater. You observe that the divided ends in this case were discoverable by the touch; that is just the consequence of the combination of contraction and retraction giving a degree of rigidity to the vessels, which enables you to distinguish them from the surrounding soft parts.

The third case is

Division of the Radial Artery.

"Ann Twyford, æt. 28, came to the surgery on the 6th October, with the blood dripping fast through the rags that had been hastily wrapped round a wound of the fore-arm. The wound had been received by the hand slipping off the bar of the window, in the act of pulling it down, and so thrust through the glass.. It was about ten minutes after the accident that she walked into the hospital. She had lost much blood, was getting faint, and the pulse was running very rapidly. The arm was grasped above, and the bleeding stopped. The flexor carpi radialis, and the palmaris longus, and part of the superficial flexor digitorum, had been divided. The outer end of the wound terminated just over the course of the radial artery, so that it was necessary to prolong it a little to get at the vessel. The lower end of the artery was the first to bleed when the pressure was removed. After it had been secured, the upper end, which had retracted most, was picked out and tied likewise. The ligatures were slightly twisted, and the wound dressed as described in Hayward's case. She was sent to bed, and had some opening medicine.

"The 8th and 9th.—Wound dressed; looks well; ligatures twisted.

"The 10th.—One of the ligatures came away.

"The 11th.—The other ligature came away, this being the fourth day after the accident.

"The 23d.—She is still in the house, but would be better at home, as she seems to suffer from the air of the hospital, having twice had diarrhœa and a blush around the wound."

1. Connect these two circumstances together: the artery is divided by a piece of glass, and you observe the wound is bleeding all the time, and the blood is oozing through this compress of cloths. This is the character of the wound, in opposition to the last case, where the artery had been more bruised, and confirms the observation I made, that the slighter the injury to the artery, the more freely it bleeds. This marks the distinction in regard to different kinds of wounds—lacerated, bruised, and incised. You are aware that a limb may be carried off, and no blood lost—that is, if an artery be drawn out and injured, so that a coagulum of blood is formed in it. I remember, when I first came to town, being in the society of some of the most eminent men, and the conversation turned upon this very subject. I took the opportunity of remarking, "You are considering the matter too mechanically; if an artery be torn it stops bleeding. If I amputate a breast, and the vessel spouts out, and I take hold of it with my forceps, turn it round, and twitch it, it ceases to bleed; nay, if I even take hold of it with my forceps, and squeeze it hard, the same effect is produced." "Oh, then," said my friends, "the reason is this: when an artery is torn, the inner coat being more brittle than the others, is divided into shreds, and they act as valves, so that the bleeding is stopped." That was undoubtedly an answer to my assertion, but it did not convince me; and I went down to the dissecting room, exposed the radial artery, put a strong probe under it, and tore it asunder. I then opened it, and examined it particularly, and found that although the coats had been torn, no such laceration of the inner coat as converted the shreds into valves had taken place; therefore my first position was a correct one. It is not a mechanical cause, but an effect upon the living property. You destroy the life of the vessel, or injure it to that degree, that it no longer exercises its influence in preserving the blood liquid, and it signifies not whether you twist, tear, or bruise the artery, the blood ceases to flow from it. When the principle of surgery is fairly laid down, and established in the pupil's mind, there is this happy effect, that he is not at once moved to wonder and carried away by new facts, such as this new method of twisting arteries instead of tying them.

2. Now here is the point much talked about at the present day—the torsion of arteries. There are none of my old pupils but must know what this torsion means. It does not mean that any mechanical change has taken place on the tube, whereby the blood is stopped; but that all injuries, whether from the presence of a compress, or of a ligature, or the death by gangrene, tend directly to produce this result—to cause the formation of a clot, in consequence of the relation established between the liquid condition of the blood and the healthy and natural influence of the arterial coats being destroyed.

3. One remark more on the necessity of twisting the ligatures. In several of these cases the ligatures were twisted; and observe what that means. If you take up

an artery, separate the ligature, and cut off the ends near the knot, leaving only one end, you cannot twist it, you must wait for the process of nature throwing it off. You may have observed from a late operation of cutting off the ligature from an artery, that it is not always easily performed, especially when there is only one thread.

My practice has ever been, not to cut off one end of the ligature. If the ligature be left quite free in the wound, the separate threads may be entangled among the granulations, and so retained for too long a time; but if you take the two ends, make them parallel, twist them, and lay them down, they do not interfere with the granulations, and are not entangled. On the fifth day you have an opportunity of twisting them a little more; and from the third to the fifth day they come away without the necessity of pulling upon them. The first object is not to allow the threads to be connected with the granulations; the second is to have an opportunity, on the third or fourth day, of tightening the knot without pulling; whereas, if there be but one ligature, the only means of taking it away is by pulling, and you can easily conceive what may happen.

The next case is—

Wound in the Ulnar Artery.

"Charles French, æt. 30, a coachmaker, on the 8th of October, wounded the ulnar artery with a chisel. It bled most furiously; but he immediately commanded the bleeding with the thumb of the other hand, and came running to the hospital."

1. It is remarkable, indeed, how little pressure, if properly applied, is effectual. You see a wound bleeding, and every body hurrying to stem the hæmorrhage, putting cloth over cloth, whilst the artery seems to be working with the force of an engine; but when you expose the proper bleeding point, and press upon it with the weight of the finger, it is effectual. I could illustrate this fact with many curious instances, shewing how men very high in our profession have been mistaken in regard to the force of an artery. Into this error they have fallen from seeing the force with which the blood is splashed from an open wound, even during their compression at the groin or above the clavicle; and because they have not had occasion to notice the very slight pressure of the finger that stops the blood, when placed directly on the face or side of the bleeding vessel. (The case proceeds:—)

"When he removed his thumb the blood spouted out violently; and not being easily commanded with the hand above the wound, the tourniquet was put on. The ends of the divided artery were buried in the ragged muscle; the upper one was picked out and tied, but there was some diffieulty in recognizing it, for it had been so obliquely divided as not at all to look like an artery; the mouth being flat and expanded, instead of round and contracted."

2. The commentary being resumed, the lecturer observed,—That is remarkable; we have just heard it stated in the former case, and I dare say accurately, that an artery divided across was retracted and contracted; but here being divided obliquely, a totolly different appearance was presented. It was expanded.

"The tourniquet was now loosened, to find the lower end more easily, and blood came from it in powerful jets."

3. So that here again you see the rule is confirmed. The upper end of the artery was tied, and the lower end began to bleed.

"This lower end was drawn out and tied, the ligatures gently twisted, the wound brought together with strapping, and a splint put on to prevent motion. On the fifth day the ligatures both came away, having been twisted at each dressing.

"Oct. 14th.—Nearly healed. An out-patient."

4. There is one circumstance which I beg to notice, and which escaped me in its proper place. You will find in some of these cases, that it was possible to compress the artery above and below the wound; and that being done by an assistant, there was no blood in the wound. But you must not always expect to do this: if there have been bad treatment at first, the cellular membrane is injected with blood, filled with extravasated serum, and then it would be impossible, even by a tourniquet, to stop the blood, and certainly it cannot be done by compression with the hand. It is only when there is no tumefaction that the pressure of the thumb above and below decidedly and firmly can be effectual in stopping the bleeding.

Lacerated Scalp.—Abscess.—The artery opened by the lancet.

The next case is,—"A man with lacerated scalp. He had an abscess formed in the temple: this was opened with a lancet, but some bleeding followed: it was stopped, however, with a compress for a time. The bleeding returned on the two or three following days, as absorption took place below the compress. At length the wound was laid open; but the vessel could not be laid hold of by the tenaculum, but a small cut was made across the direction of the vessel; the wound remained open, but no more hæmorrhage occurred."

Here is another circumstance in confirmation of what we learned from the other cases, that so long as a vessel is kept entangled and stretched, so long it will

bleed from time to time; but being divided, the hæmorrhage ceases. If there be bleeding from the temporal artery which you cannot arrest, divide it, and it stops. In bleeding from the temporal artery, if you cut it across you do not get enough blood for the same reason, and therefore it is your aim to open it at the side only, in correspondence with the principles shewn above.

I must once more remark, that these cases, which have been properly treated by surgeons acquainted with the anatomy of the arteries, stand in remarkable contrast with others—not only with such as are on record, but it may be with those which may hereafter come under your care; for if a wounded artery be neglected, or improperly treated in the first instance, or if the blood be confined by the closing of the outer wound without securing the bleeding vessel, a very different scene presents itself, and your difficulties are much greater than you would suppose from these narratives.

COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS IN OCTOBER 1834.

James R. Parkinson, Dublin.
H. Batson, Stanlake.
Richard Dyas, Dublin.
Charles T. Carter, Newcastle-upon-Tyne.
George Broad, Penzance.
Richard T. Smith, Manchester Street.
William Archer, Sudbury.
Joseph Hutchinson, Lincoln.
Perceval Kirton, Quebec.
Robert H. Rennick, Enniskillen.
Richard T. Hunt, Wye.
Zachariah R. Stewart, Blackman Street.
Robert Palgrave, Norfolk.
George Gill, South Normanton.
William W. Webb, London.
Richard W. Martin, Chatham.
Richard Tristan, Roscommon.
James Parks, Bury, Lancashire.
George Harvey.
Charles Boyson, Newton, near Swansea.
Eagan Jones, Bristol.
Henry J. Townsend, London.
Thos. P. J. Grantham, Burgh-le-Marsh.
Gordon Gwynne, Army.
Robert James, Falmouth.
John Parker, Rochdale.
Edwin Edmonds, Penzance.
John Brownfield, Norwich.
Edward Thompson, Sheffield.
John D. Potts, London.
William Jones, Judd Street.
Roger G. C. Gardiner, Southwell, Notts.
Edwin Allen, Crewherne.
John K. Eager, Guildford.
James Liston, Barnstable.
Samuel H. Evans, Belper.
James Hindle, Norton, Yorkshire.
Richard L Hopkins, Army.
John C. Bellamy, Yealmpton, Devon.
Francis Harrison, Bombay.
John H. Watson, R.N.
Francis A. Young, Hawkhurst.
James Deane, Spalding.
Robert Marsh, Bath.
William Jones, Henley-in-Craven.
Thomas Slipper, Ladham, Norfolk.
Patrick H. Morris, Scarriff, County Clare.
Samuel C. Gardner, Burnham, Essex.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO RECEIVED CERTIFICATES ON THURSDAY, NOV. 6, 1834.

Edward Hyde, Witney, Oxfordshire.
John Henry Bull, Lindfield, Sussex.
John Barker, Ixworth, Suffolk.
John Gonner Robinson, Colchester.
Jesse Leach, Rochdale.
Joseph Lancaster, Clifton.
Frederick Bell, Terington, St. John's.
Robert Kirby, Knaresborough.
Thomas Edward Rawson, Kegworth.
William Smith, Worcester.
Edward Williams, Denbigh.
Godfrey Bingley Wadsworth, Boughton, Yorksh.
Henry William Rush.
John Milligan, Bradford, Yorkshire.

M. DUPUYTREN.

The latest account of this distinguished surgeon, given by M. Orfila in the Academie de Médecine, is, that there has been some improvement. M. Dupuytren had got some sleep: his respiration was better, he spoke distinctly, and the swelling was somewhat less.

CONTROVERSY BETWEEN DR. BLUNDELL AND DR. ASHWELL.

We have perused the various documents with great pain, and must decline giving insertion to them. Dr. Ashwell's communication of the 5th has been received; but as we did not publish Dr. Blundell's second letter, he will perceive that we cannot with propriety insert his answer to it.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *Nov.* 4, 1834.

Abscess	4	Inflammation	18
Age and Debility	27	Bowels & Stomach	2
Apoplexy	14	Brain	2
Asthma	15	Lungs and Pleura	10
Cancer	2	Insanity	4
Childbirth	5	Jaundice	1
Cholera	3	Liver, diseased	6
Consumption	67	Measles	7
Convulsions	24	Mortification	4
Croup	3	Paralysis	9
Dentition or Teething	6	Scrofula	1
Dropsy	24	Small-Pox	6
Dropsy on the Brain	12	Sore Throat and Quinsey	2
Epilepsy	2	Spasms	3
Fever	7	Thrush	2
Fever, Scarlet	18	Tumor	1
Fever, Typhus	3		
Gout	1	Stillborn	14
Hæmorrhage	1		
Hooping-Cough	9		

Increase of Burials, as compared with the preceding week . . . 89

METEOROLOGICAL JOURNAL.

Oct. 1834.	Thermometer.	Barometer.
Thursday . 30	from 47 to 53	30·46 to 30·31
Friday . . 31	42 58	30·15 30·08
Nov.		
Saturday . 1	49 58	30·05 Stat.
Sunday . . 2	50 59	30·04 Stat.
Monday . . 3	46 58	30 02 29·97
Tuesday . . 4	45 60	29 89 29·80
Wednesday 5	50 63	29·72 29·55

Prevailing wind, S.W.

Generally cloudy, with frequent intervals of sunshine; rain frequent during the 5th.

W. Wilson, Printer, 57, Skinner-Street, London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, NOVEMBER 15, 1834.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture VII.

DISEASES OF THE LUNGS.

CATARRH.

Symptoms —General Signs.—We now proceed to consider the general signs of Catarrh.

At the period when the membrane commences to swell, and even sometimes before, the patient experiences a general lassitude and inaptitude to movement; he feels cold, a chilly air seems to run in an irregular manner between his skin and muscles, and this is more particularly felt in the back and loins; the sensation is at last so complete that it produces horripilation or rigor; the skin then contracts, its papillæ become elevated, forming what is called "chaire de poule," or goose skin:" the various functions of the body seem to have lost their energy, those of the brain evidently—perception, judgment, and reasoning—are confused; sometimes there is a singular exception to this, for those faculties become exalted for a time; the pulse is rapid but weak, the urine small in quantity and limpid. These symptoms are soon followed by irregular flushes of heat, sometimes occurring at one part of the body, sometimes at another, alternating with the cold and intermingling with it, so that the patient feels frequently, in consequence of the rapidity of these changes, the two different sensations in the same place, and almost at the same instant; at last an universal glow pervades the frame; the pulse remains rapid, but becomes full, the urine is still small in quantity, but high coloured, the skin expands but remains dry, finally a perspiration more or less copious comes on, the functions are restored, and debility alone remains. After this febrile attack there is then a remission of symptoms, to recur usually in the evening.

The other mucous surfaces of the body frequently sympathize with the bronchial mucous membrane; thus there is often slight diarrhœa, ardor urinæ, and nocturnal seminal emissions.

CAUSES.

Individual.—We now pass on to the causes; and first to those which relate to the individual. All ages, temperaments, and both sexes, are subject to catarrh, but you usually find that persons of dark complexions, dark hair, dark eyes, or of what is called the *bilious* temperament, are most subject to the mucous form, whilst the pituitous commonly attacks those of an opposite or lymphatic habit. There are other causes relative to the individual, and to which catarrh has been attributed, but I doubt whether correctly. It has been said that the suppression of epistaxis, of hæmorrhoidal discharges, of the catamenia, and of eruptions, will produce this disease. This is a leaven of the old humoral pathology. I will not take it upon me to say that these are not occasionally causes; but I never saw a case of catarrh that could fairly be attributed to them.

There are causes which greatly predispose the individual to this affection, such as fatigue, hunger, excess of any kind, as drinking, venereal excesses, and low and humid habitations.

External.—The first and great external cause of catarrh is certainly cold, especially when combined with moisture. Cullen has exceedingly well laid down the cir-

cumstances under which cold acts. In the first place it acts upon the body in proportion to its intensity. Secondly, according to its duration: if a person be exposed to cold for a long time, he will be more liable to its effects than if he be exposed only for a short period. Thirdly, according to the direction of the air on the body: it is well known that if it be directed in a current to a particular part, its prejudicial effect will be felt sooner than if the body generally be exposed to it. The most powerful circumstances, however, in inducing disease, are the variations from cold to warmth, and from warmth to cold.

There are other causes which may be said to be chemical, and which seem to act directly by irritation, viz. the inhalation of certain gases, as of chlorine and of sulphureous acid gas. There is, however, this remarkable difference between catarrh thus induced, and that arising from cold, that the former is shorter in its duration.

Epidemic Catarrh, or Influenza.—Catarrh occasionally assumes an epidemic character, and spreads widely over various regions of the earth. It occurred in the days of Hippocrates; it has occurred also in modern times, and doubtless in the intermediate periods: there happened five instances of it in the 16th century, one in the seventeenth, nine in the eighteenth, and three in the present. This form of the disease has received a variety of names: in France it is called the *Grippe*, the *Follette*, *Baraquette*, *Petite Poste;* in Italy, the *Influenza*, which latter name we have adopted.

It is impossible to form an accurate judgment from the works of old authors, as to what really was the nature of the epidemic which they called catarrhal: that the symptoms of catarrh predominated there can be no doubt, but it is extremely probable that they were combined with those of peripneumoina, or inflammation of the substance of the lungs. In the epidemic of 1782, Dr. Smith describes, besides the cough and dyspnœa, the following symptoms. It commenced with a great languor and oppression of the præcordia, sighing, sickness, and great headache. The pulse was quick and irregular, and there was often nocturnal delirium; the skin was moist, with a tendency to perspire; the tongue white or yellow, muscular pains, erysipelatous efflorescence, sometimes ending in gangrene and death. The greatest danger was in the first forty-eight hours, and it attacked particularly those who were healthy and robust. As auscultation was not then known, and morbid anatomy was but little cultivated, it is impossible for us to ascertain whether the epidemic was simple catarrh, or a combination of it with pleurisy or peripneumonia; but I should think that in all probability it was the latter.

The epidemic of last year, which I cannot pass by without alluding to, occurred in two forms. In the first, it prevailed in the form of common catarrh of various degrees of intensity: the second form was evidently a combination of catarrh and peripneumonia. I did not meet with a single severe case in which there was not crepitation in the inferior lobes of the lungs; the disease was, in fact, the peripneumonia notha of old authors: the *post mortem* examinations proved it, for the bronchial tubes were filled with secretions, and the substance of the lungs was engorged with a sero-sanguinolent fluid; here and there hepatization was apparent, but the disease generally destroyed the patient before extensive consolidation of the lungs took place: in old persons the engorging fluid was less red than in the young, the affection seeming to take an intermediate character between peripneumonia and œdema pulmonum.

The general symptoms of the *Influenza* differed from ordinary catarrh in the greater degree of violence with which they commenced, the febrile symptoms being commonly of a low or asthenic type, although they occasionally put on an exquisitely sthenic form: in the severe cases, the dyspnœa became extreme, the cough troublesome, and the expectoration difficult; frequently there were violent rheumatic pains, particularly in the respiratory muscles: the local signs consisted of wheezing of all kinds, sibilating, sonorous, and mucous; and I invariably found crepitation in one or other lung, indicating effusion into the cells: congestion, more especially in the brain, soon came on, in the young, generally inducing delirium; in the old,—a muttering coma, from which they could be aroused but with difficulty. These two last signs indicated a fatal termination.

What is the cause of this disease, and of its extensive prevalence? This is a question that has occupied the attention of medical philosophers from the period of Hippocrates down to the present time, but I cannot enter here into any elaborate details upon the subject. Hippocrates attributed it to Divine agency: others have supposed it to depend upon a certain condition of the electric state of the atmosphere; and others have attributed it to terrestrial emanations, particularly Sydenham. That certain diseases are caused by miasmata arising from the earth, there can be no doubt; we have the evidence of it in intermittent and remittent fevers; but these miasmata do not act far from the situation in which they are produced, whereas influenza prevailed over hill and dale, mountain and valley, over all coun-

tries, and did not seem to depend upon local causes. Epidemic catarrh sometimes took the course of the prevailing winds; but, like the cholera of India, it frequently travelled in the very teeth of them. In this country, the epidemic appeared in weather particularly favourable to the production of ordinary catarrh; but in other places it was most violent in fine weather. That there exists a cause is certain; it probably arises from some modification of the atmosphere, but this is not yet proved. It is best therefore to avow, what all who have thought upon the subject must feel, that we are perfectly ignorant of its nature.

Another question that has arisen is, whether the disease can be propagated by contagion? We have no proofs that it can, though it was formerly supposed that it might be so extended. The following story is told by Dr. Hugh Smith regarding the epidemic of 1782:—A soldier went on a furlough to St. Alban's; the disease had not previously been felt there, but it occurred after his arrival. One instance, however, is not sufficient to prove a general rule, and I think we have no cases which decidedly shew that the influenza was contagious.

Treatment.—We must now consider the treatment of catarrh. The disease in its mild form requires very little attention; it is usually sufficient to place the patient in bed in a warm room, and give demulcents, to determine to the surface, and in a few days the disease subsides. I generally give, for the purpose of inducing perspiration, the liq. amm. acetatis, combined with small doses of Dover's powder and camphor mixture. The patient usually soon recovers his strength, and any ordinary tonic, given after the febrile symptoms have subsided, may be then administered.

But if the disease be violent, if there be much dyspnœa, much oppression at the chest, and the cough is very irritating, then it may be necessary to diminish the powers of the system by venæsection, or by leeching. The quantity of blood abstracted must be proportionate to the strength of the patient, and to the intensity of the disease: it is impossible to give any other general rule. Blisters are sometimes employed, but I should recommend you not to use them during the febrile state, for they produce considerable irritation, and add to the disturbance of the individual, without being of any benefit. But when the dyspnœa or oppression continues, or if the expectoration be difficult, then they are of great advantage. Another indication is to facilitate expectoration, and for this purpose ipecacuanha is with me a very favourite remedy. It may be given in doses of one grain every four hours. Tartar emetic has been exhibited with the same view, but I think ipecacuanha is better; it is not so liable to purge or depress. On the continent it is the custom to give emetics, and they are very useful, particularly to young children who, although they expectorate, do not spit out the secretion, but swallow it, and the result is, that the stomach becomes disordered. In adults, squills and ammoniacum are frequently of great service, but you must beware of exhibiting them to children or persons of irritable fibre, or when the disease still exists in the acute form: they are best exhibited towards the termination of the catarrh, when it tends to become chronic, and when the secreted matters are viscous, tenacious, and consequently difficult of expulsion.

One of the most teazing symptoms is cough; it commonly disturbs the patient far more than any thing else. The cough, as I have already said, is first caused by the dryness of the passages, and then by the acrid secretion. To obviate this, you may give demulcents, as oily emulsions, barley-water, linseed-tea, &c.: they seem to act mechanically, by forming an artificial mucosity, which lubricates the parts; sipping even water for a certain time will relieve the irritation, and free the patient for some hours. Sometimes the cough is so violent that the patient cannot obtain any rest, and opium then, especially after the febrile symptoms are over, is one of the most valuable remedies we possess: it acts like a charm, and gives time for a proper secretion to form.

As to the treatment of epidemic catarrh, or influenza, we have only the experience of the past year to guide us, and it was found that the moderate form required very little treatment at all; it was merely necessary to put the patient in bed, and give demulcents. In the acute, the treatment then became a matter of serious importance. Patients did not bear depletion generally, although there were exceptions to this rule, in the young and plethoric especially. Finding that there was always crepitation in the inferior lobes of the lungs, it appeared to me that mercury was one of the most proper remedies to be used, not only to subdue the inflammatory action, but to occasion absorption of the fluid effused into the air cells. I will mention one instance, strikingly illustrative of the advantageous effects of this mode of treatment. It happened to be my duty to admit the patients into this hospital, one week during the period when the epidemic was at its height: expecting a great many applications, the Committee placed at my disposal thirty-two beds, and these were all soon filled with individuals

labouring under the severe forms of influenza—so severe, that I firmly believe, if these poor people had been allowed to wander about the streets, or to remain at their own homes, with the insufficient attention they could there have obtained, they would for the most part have perished. If I recollect rightly, only one or two of these patients were bled, but they were all placed under the influence of mercury. This treatment commenced on Thursday, and by Saturday night all who were affected in the usual way by the remedy, safely and ultimately recovered, with the exception of two, and one of those had hypertrophy of the heart, with diseased aortic valves.

I should state that I never, if I could avoid it, carried on my plan to salivation, but merely rendered the mouth tender, and kept it so for a week or two. It was necessary that the action of the mercury should be prompt, and we found that the most quick and efficacious means of effecting it, was the rubbing in the linimentum hydrargyri.

The common people have a mode of treating catarrh which is occasionally successful; it frequently destroys the disease at once; but if it does not produce that effect, it will do great mischief, and perhaps destroy the patient. It is by taking wines, spices, and things of that description. The good effect of these means is produced by inducing copious perspiration; but these remedies are pregnant with high danger, if the patient be young and plethoric, and of firm fibre, or if there be dyspnœa, heat and oppression of the chest, and hard dry cough. I may here remark in passing, that there is scarcely an opinion entertained by the people at large as to the mode of treating disease, however erroneous it may be, which does not owe its origin to some old and exploded theory. This is the mode proposed by Van Helmont, but has long been disused by medical men.

Treatment of Acute Laryngitis.—The principles upon which the treatment of acute laryngytis should be founded, are similar to those of any other severe catarrh; the difference is only in the promptitude and activity with which the remedies should be administered. You will recollect, gentlemen, that the danger, and imminent indeed it is, depends upon the degree of swelling of the mucous membrane lining the rima glottidis; the more it is swollen the narrower the orifice becomes, and the smaller the column of air.

The first remedy to be used is general bleeding, and that should be carried to an extent proportionate to the intensity of the symptoms and the powers of the patient. If after bleeding, perhaps once or twice repeated, the symptoms are only slightly diminished, then leeches or cupping may prove of service; and here I may recommend you to follow the advice given by Dr. Farre, in his excellent lectures upon this subject, which is, not to apply leeches over the external surface of the larynx, but rather along the line of the clavicles or the neck, as they often induce an œdematous state of the skin or ecchymoses, which occasion a stiffness of the parts, and add to the suffocating feelings of the patient. Blisters may also be applied upon the chest, or nape of the neck, but not over the inflamed part, and for similar reasons to those above stated; indeed, there is another reason why blisters should not be applied upon the throat, which is, that, if tracheotomy be necessary, you would then have to cut through the inflamed skin, by which the operation would be rendered more difficult.

There is no remedy of more importance and utility in this case than mercury; it is useless to employ it in small doses, for its effects must be produced rapidly—often, if possible, within a few hours: if given internally to an adult, not less than three or four grains of calomel should be administered every two hours until the mouth be rendered tender: but I do not depend upon it alone; I always direct a considerable quantity, as one or two ounces of ung. hydrargyri fortius, or the linim. hydrargyri, to be rubbed in for an hour or two, and to be repeated in three or four hours, using it without limitation until the patient is relieved. You must not be afraid of the remedy, and you will often be rewarded by seeing a permanent relief afforded as soon as the mouth is affected.

But it sometimes happens that even mercury is insufficient, or that you may be called in so late that there is no time to employ it: you perceive your patient convulsed with distress—suffocating—struggling with death—and not a moment is to be lost; then, gentlemen, the only means you possess is to establish a communication between the trachea and the air by forming an opening below the inflamed part; this is done by the operation of tracheotomy, for the description of which I refer you to your surgical works.

CHRONIC MUCOUS CATARRH.

Chronic mucous catarrh is the common infirmity of old age; it not unfrequently, however, occurs in children, particularly as a consequence of whooping cough. This disease may persist for many years.

Morbid Anatomy.—The mucous membrane is in this case usually of a pale violet colour, in patches: sometimes in old persons it has been seen very pale, or of a yellowish tint, mixed here and there with red. Dilatation of the bronchial tubes

frequently accompanies chronic mucous catarrh.

The secretion is generally of a less viscous quality than in the acute form, but more opaque; its colour is yellow, varying to grey or green; it is sometimes clouded with a dark tint, supposed to arise from a mixture of black pulmonary matter; it frequently happens that the yellow sputa are seen to float in a transparent viscous, or pituitous fluid: these sputa are commonly diffluent, but occasionally of an irregular round form; the secretion is usually inodorous, sometimes it has the smell of pus, or the discharge from a blister, or even that of gangrene of the lung: the quantity of the expectoration varies of course according to the extent of the disease; there have been thrown up as much as two or three pints in twenty-four hours.

Local Signs.—The mucous rattle is one of the most common sounds heard in this disease, and to an extent proportionate to the tubes affected; the deep sonorous wheeze, and sibilation even, may be distinguished when the mucus is tenacious; but these latter sounds are not permanent, for a strong act or two of respiration, or a cough, will remove the secretions, and occasion these noises to cease: there is rarely a total suspension of the respiratory murmur, as in the acute mucous catarrh; but sometimes the necessity for respiration is so increased, that the puerile respiratory murmur may be heard nearly all over the chest. It then constitutes one of the forms of the disease we shall hereafter describe under the name of *Humid Asthma.*

Functional and General Signs.—Laennec describes, with the most perfect accuracy, the symptoms and course of this affection, in the following manner:—

"This disease is most commonly consequent upon severe acute mucous catarrh. The fever ceases without any diminution of the cough or expectoration, or changes into a slow fever hardly distinguishable, except in the evening. The patient recovers his strength and appetite, but generally remains paler and becomes thinner: in a state of repose, he breathes easily; but during exercise, with difficulty: sometimes after having lasted for many months, or even a year or two, it gradually disappears, and leaves no trace, and this occurs particularly in young persons: more commonly the expectoration and cough diminish, and even disappear in summer, although even then the patient is subject to catarrh in the dry and latent form: in winter it again becomes mucous and evident, and often its return is accompanied by fever, particularly if the expectoration be abundant: after many returns of this kind the affection remains permanent, and in most cases, although the patient become weaker and thinner, the pulse and heat of the skin continue natural."

I have occasionally seen so large a quantity of secretion formed as to suddenly and completely obturate a large bronchial tube, so that the dyspnœa became instantly increased to such a degree as to threaten suffocation: in these cases relief was only obtained by a copious expectoration: this may be classed under one of the causes of humid asthma. If the secretion accumulates, and there be no power of expectoration, the disease is then called *Suffocative Catarrh.*

In some rare cases, hectic is established, the patient becomes exceedingly thin, and the disease terminates in death: indeed, so completely does chronic mucous catarrh put on then the appearance of tubercular phthisis, that none but stethoscopic means could possibly distinguish them. The following case will exemplify this fact:—

About seven or eight years since, Mr. Fuller, the surgeons' instrument-maker, living near this hospital (who permits me to use his name), was supposed to be in a state of hopeless consumption; I was requested to see him, and found he had been labouring for some months with severe cough and dyspnœa; the expectoration was puriform and copious, emaciation great, fever of a hectic character, having evening exacerbations, and terminating in night sweats, and the pulse always very rapid. The functional and general signs of tubercular phthisis were so very evident that I was hardly disposed to fatigue him by a local examination; however, upon doing so, I found no pectoriloquy, no cavernous cough or respiration, no local evidences whatever of tubercles in the usual situations, below the lines of the clavicles, but the mucous rattle was universal; here, then, was quite sufficient, in the extent of the mucous catarrh, to account for the symptoms without supposing a tubercle to exist. Leeches were frequently applied to the chest, blisters still more so, so that at one time I might say he had on an epispastic waistcoat: nauseating expectorants were given, and in a few weeks he perfectly recovered. It is in doubtful cases, like this, where auscultation is indeed of high importance.

Treatment.—There are three indications to be observed in chronic mucous catarrh:

1st. To relieve any inflammatory congestion. 2d. To free the expectoration. 3d. To give tone to the bronchial capillaries and to the general system.

First Indication.—To relieve inflammatory congestion. It frequently happens, especially during great atmospheric changes, that the acute form of mucous

catarrh will be superadded to or grafted on the chronic, and the patient's distress of breathing will considerably increase; in this case, if he be young, the abstraction of blood by leeches, or cupping, is useful; and even in old persons, if the oppression be great, I often apply a few leeches upon the sternum with advantage; general bleeding is rarely borne, I will not say that you should never have recourse to it; but you certainly should not, except the inflammatory symptoms be urgent, and the patient possess sufficient power.

Second Indication.—To free the expectoration. One of the best means of fulfilling this indication is by an emetic; it is particularly useful where the secretion is large and difficult of expulsion. The medicaments, called expectorants, are but uncertain in their operation, but we have a considerable list of them in common use; thus, ipecacuanha and tartar emetic answer best in young persons, or when an inflammatory state exists: but the aged, or those of weak, lax, and lymphatic temperaments, are most relieved by the stimulating class, as squills, ammoniacum, copaiba, tolu, turpentine, myrrh, &c.: the sulphate of zinc has been exhibited with some advantage, but I think the most powerful of all is the sulphate of copper; I am in the habit of frequently using it where the secretion is copious and viscid, and in doses of a third or half a grain dissolved in water three or four times a day.

Inhalations of tar vapour, or of chlorine, prove frequently of advantage in chronic mucous catarrhs. Blisters are of great use, particularly if the oppression or dyspnœa be considerable.

The third Indication is to give tone to the bronchial mucous membrane and to the general system. This is fulfilled, as far as relates to the membrane, by many of the expectorants already mentioned, especially those of a stimulating kind, but the direct tonics should also be combined with them, as the quinine, cascarilla, gentian, acids, &c.

One of the best tonics is passive exercise, combined with change of air, when the weather permits, as sailing and riding. I have known many instances of persons recovering from chronic catarrhs after long journies, if these were not performed too hastily, so as to occasion fatigue.

I need not say that all the remote causes should be avoided; above all, exposure to rapid atmospheric changes; indeed, you will find it necessary to confine persons afflicted with this disease, in warm rooms during winter, for the purpose of obviating this cause.

PATHOLOGICAL LECTURES,

Delivered in King's College, London,

BY

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IV.—*On Caries.*

WHAT an ulcer is in the soft parts of the frame, caries is in bone. Both of these affections are ordinarily preceded by inflammation, and are prevented when that inflammation can be arrested and subdued. Both in their progress are attended with inflammation. Both are often accompanied with partial death (gangrene in the one case, necrosis in the other) of the parts attacked. In both there is an absorption of substance, producing an excavation, commonly associated with an unwholesome and irregular growth from the ulcerated surface.

As there are different kinds of ulcers, so are there different kinds of caries: they may be divided into simple, strumous, syphilitic, and those which attend lupus and cancerous ulceration. At the same time it must be observed, that it is not always possible rigorously to distinguish each of these varieties. In some instances it is difficult to determine satisfactorily whether caries is simple or scrofulous; in others, whether it is scrofulous or syphilitic: so that persons well and equally conversant with disease might differ in opinion upon the nature of particular cases, who might yet admit the justness of the foregoing general distinctions.

The clearest instances of simple caries occur in the shafts of the long bones,—of syphilitic caries, in the shafts of long bones and in the cranial bones,—of strumous caries, in the flat bones, and round bones, and articular ends of the cylindrical: thus there exists in particular bones a susceptibility of particular forms of caries. For this and other reasons, I am disposed to make difference of structure in bone the basis of my arrangement in describing the varieties of caries.

I. The shafts of the long bones are liable to be affected with simple caries, syphilitic caries, and caries from cancer.

a.—The adjoined figure represents a simple caries of the fibula. At the excavated part, to borrow an expression of Mr. Syme's, the surface in the dry bone has the appearance of loaf-sugar, which has been partially dissolved by dipping into hot water. The excavation is irregular; its surface soft and porous. The

adjacent bone is enlarged from inflammation, and its cortex is likewise unusually porous, but hard.

The patient, a man past the middle age, had suffered many years with a large ulcer on the outside of the leg, which would sometimes partially heal, and then again spread to its former size. Over the fibula the ulcer was deeper than elsewhere. The appearance of the granulations was not the same at different parts of the ulcer. The portion of the surface, again, which was healthy at one time, would shortly after assume an unwholesome character, while the first became covered with florid granulations. Upon the greater part of the ulcer, the granulations were generally grey and flaccid, or greenish, or yellow and unorganized. A probe passed into the granulations covering the fibula, broke easily through a soft and gritty texture. The limb was amputated below the knee, in the Middlesex Hospital, in 1819. The tibia was found to be inflamed and enlarged. The patient died.

Simple caries is a consequence of inflammation of bone in a constitution deficient in vigour. The tibia is the most frequent seat of the disease.—It has inflamed, but instead of gradually recovering, or forming a clean abscess, or disengaging a necrosis and undergoing a wholesome reparation, a portion of the enlarged crust softens, the cancellous structure within softens, and in place of marrow, a thick brown fluid occupies its cells. The disease is often coupled with necrosis:—a sequestrum has come away; the adjacent bone is carious. It may again be associated either with a single cavity or with irregular channels, containing pus; that is to say, with abscess. The external appearance of the limb is the same in necrosis and caries: the bone appears enlarged, and one or more sinuses open through the skin, at points where the integument is red, and soft, and sunken, and undermined.

The degree of hardness of bone varies in different instances in caries. There is in our museum a caries of the great trochanter, in which the diseased surface, though worm-eaten, is hard and solid.

Mechanical injury is a frequent cause of caries in the shafts of long bones.

The principles upon which this disease is to be treated are the following. As the disease depends upon inflammation, the remedies, general and local, which are calculated to remove inflammation of the bone, are to be employed. If these fail, as the diseased surface of an ulcer may be destroyed, so may that of a caries. But I think the removal of the diseased bone with the trephine and the chisel and the knife, preferable to its destruction by the cautery. The surgeon must bear well in mind, on this occasion, that the resources of his patient's constitution admit of being exhausted; that he may die while he is in a protracted progress of cure; and that the amputation of the limb may be sometimes preferable to the attempt to extirpate a caries.

c.—In the following figure is represented a syphilitic caries of one of the metatarsal bones. There is upon it a growth of porous bone, in two patches; the porous growth towards the lower part being riddled with irregular holes, and that towards the upper part being furrowed by longitudinal grooves. Near the head of the bone the cortex is ulcerated through, and the cancellous structure is laid bare, which had taken on the same action with the crust. In this skeleton, almost all the bones presented more or less of the same appearance.

Syphilitic caries is attended with very little enlargement. The inflammation with which it begins occupies either the periosteum alone or the periosteal surface of the bone; the periosteum thickens, and is often exquisitely painful. This renders it sometimes necessary, at an early period of the disease, to make an incision down to the bone. Occasionally, under these cir-

cumstanees, a thick, viseid, glairy matter, not unlike honey, is found in eells of the periosteum. The inflamed and thickened periosteum, with more or less of porous growth of bone below it, eonstitutes *a node*. The cylindrical bones most frequently attacked with nodes are those which are subeutaneous—the tibia, ulna, clavicle.

In the natural progress of a node, the integuments covering it inflame and ulcerate; the skin, before breaking, has a livid colour; afterwards, the skin surrounding the uleer has the same hue. The edges of the ulcer are commonly a little raised, and its outline irregular, and its surface is covered with unhealthy granulations and viscid ash-coloured seeretion.

Syphilitic caries is often attended with partial necrosis and exfoliation.

I am not prepared to say to what extent mercury, given injudiciously, may contribute to produce syphilitic inflammation and earies of the bones; but this I know praetically, that nodes frequently yield rapidly to the cautious exhibition of mercury; and that if a patient affected with nodes has not taken mercury, and is not greatly extenuated, or of a marked serofulous diathesis, mercury alone or with sarsaparilla is the most likely remedy to sueceed in at once arresting the disease. When mercury has been used with or without good effect, iodine is commonly found of striking benefit. In this capricious malady, every case is a separate study; and the skill of the practitioner is principally evinced in timing the *succession* of remedies, by which it is to be subdued.

d.—The skin is sometimes the seat of cancer. I witnessed a ease in the Middlesex Hospital, in whieh Mr. Cartwright amputated the leg, for a cancer over the tibia. There is in our museum a tibia from a patient affeeted with the same disease. The tibia is deeply exeavated, having suffered a passive ulceration in the progress of the eaneer.

II. The flat bones are liable to every form of earies.

a.—Simple earies is not frequent in the flat bones: from their plaee, when it oecurs in them, it is serious and intraetable. I recolleet an instanee, under the eare of Mr. Cartwright, in the Middlesex Hospital, of earies of the ilium from a pistol-shot. The patient, after lingering some months, died. In another ease, whieh was under my care, a patient died with earies of the aseending plate of the isehium, eonnected with urinary fistula.

b.—Strumous caries often attaeks the flat bones.

A young man, about twenty-five years of age, became my patient for earies of the bones of the head and face. A small exfoliation had taken plaee from the os malæ of the left side, and from the right supereiliary ridge. The integuments of the right side of the forehead were swollen, puffy, and tender; there was a diseharge from the nose, and a part of one turbinated bone was necrosed. No ground existed for supposing that the disease was of syphilitic origin. This patient was eured by the use of iodine, whieh I have found much more useful in strumous diseases of the bones than of the joints; and, when given in alternation with other tonics, than when persevered in singly for a long continuance.

A gentleman, ætat. 37, in whom the strumous diathesis is strongly marked, consulted me for caries of the palate. The incisor alveoli of the upper jaw were earious also; but this he attributed to a blow. He was liable to inflammation of the tonsils, attended with ulcers. I believe the complaint was not syphilitic. His sister, about whom I was likewise consulted, had caries and partial necrosis of the turbinated bones. Both patients recovered under treatment suited to scrofula.

The sternum is frequently the seat of strumous caries. In connexion with this complaint, matter sometimes accumulates behind the sternum in the anterior mediastinal cavity; for the liberation of whieh the use of the trephine may be necessary.

In giving an account of a case of spine affected with scrofulous disease, in which the vertebræ were softened and beginning to ulcerate, Sir Benjamin Brodie adds, that "the ribs were porous, their cancelli being filled with a curdy matter; they

were soft, so that they might be divided with a scalpel. Four of the ribs were separated from their attachment to the spine, and were ulcerated as far as their tubercles."

c. The cranial bones are frequently the seat of syphilitic action. The inflammation begins on the pericranial surface, but it frequently extends through the cancellous structure to the inner table. Portions of the inflamed bone often become necrosed. There is nothing in the appearance of syphilitic caries of the cranial bones to distinguish it from strumous caries. The extent of the caries (seldom considerable in scrofula), and the affections with which it is actually combined, or which have preceded it, are the only circumstances which direct our diagnosis. In dry specimens of syphilitic caries, the outer surface appears worm-eaten — perforated by ulcerated holes of different sizes; while in connexion with this, the inner table often is swollen, and porous,—prominent in irregular and broken, but smooth and shallow, edges.

A close affinity exists between the cachectic states produced by lues and scrofula. The resemblance holds not only in the features of disease, but in the remedies which are serviceable in common to both. The extreme and decided cases of the two affections are, indeed, strikingly dissimilar, but there is a neutral ground, where the two are confounded.

d. There is a form of caries which is frightfully destructive of the bones of the face. It is called *lupus*, or *noli me tangere*. It commences in the soft parts, and the bones are secondarily affected. The ala nasi is the part first attacked. The skin covering the ala nasi becomes red and hard, and ulcerates, the ulcer presenting a yellow lardaceous surface. The ulcer slowly spreads, the circumference of red and hardened skin extending with its enlargement; it gradually destroys the cartilages of the nose, the ossa nasi, the upper maxillary bones, the spongy bones, and finally attacks the frontal. The patient then perishes of inflammation of the meninges of the brain. The bone, in this disease, does not seem to be merely passively absorbed; it inflames before it ulcerates: at least, in one of two specimens in our museum, there are light ridges of porous bone formed upon the os frontis, near the boundaries of the ulceration.

The disease, when taken early, may be eradicated by the destruction of the parts attacked, with caustics. But it always has a tendency to return; nor is any medicine known to have the power of specifically correcting the latent organic vice on which it depends.

e. The lower-jaw rather deserves to be classed among the cylindrical than the flat bones: it is liable to ulcerate under two forms of cancer.

Carcinoma occasionally begins in the glandular parts at the angle of the jaw. When the ulcerative stage comes on, it involves the bone, which is absorbed to the level of the cancerous ulcer which surrounds and includes it.

f. There is another disease, which is called cancer of the lip. It is commonly produced by fretting a cracked surface of the lip. It presents the appearance of a deep ulcer in dense and indurated texture. The disease has not the malignancy of cancer. When removed by excision, it does not commonly return. This disease is sometimes allowed to make considerable progress before the patient will consent to an operation; in which case, great part of the lip may have been destroyed, and the induration may have extended to the gums and periosteum of the jaw. The bone, however, is not involved in it; so that even then, at the expense of the mutilation, the disease may be eradicated, all the soft parts attacked being removed, and the thickened periosteum entirely scraped from the bone.

III. The round bones, and the articular extremities of the cylindrical bones, are especially subject to strumous caries. The instances, even, which might admit of being considered as simple caries, most frequently occur in persons of the scrofulous diathesis.

Syphilitic caries very rarely attacks the round bones: I have seen but one instance in which this happened. The pain and tenderness with which, at one stage of lues, the joints are affected, appears to have its seat in the ligaments, not in the bones.

The round bones, again, are rarely ulcerated through cancer; not that they are less susceptible of this mode of caries than other bones, but that cancer very rarely occurs in their vicinity.

In caries of the round bones and of the articular ends of cylindrical bones, the disease derives its character and importance from the destruction with which it threatens the contiguous joints. The soft textures of the articulation are forced into disease by the irritation of the neighbouring caries. This order of the invasion of disease, is, however, of course often reversed; and caries of the articular aspects of bone secondarily produced by the extension of inflammatory action from the cartilages. The compound diseases which are thus originated, will be considered in the lectures on the pathology of joints. On the present occasion, I shall limit myself to describing such appearances in the round bones and articular

ends of the long bones, as certainly do not originate in the extension of disease from the special articular tissues; and which have been, with more or less correctness, considered either to be caries, or the state which precedes it.

1. The bones adjacent to a diseased joint are sometimes soft, so as to be readily cut with a knife, and to yield and break down under pressure; without, at the same time, any increase of vascularity existing, or change in the appearance of the medulla. This softened state of the bones is occasionally misrepresented as disease. The surgeon, after displaying the morbid alterations of the cartilages and synovial membrane of a joint, proclaims the bones diseased, because they want their usual hardness. When, however, the appearances are limited to those which I have described, the bones are not diseased: they are merely atrophied, their osseous tissue wasted;—instancing the first of the forms of atrophy which were described in the second lecture.

2. The form of caries which, in the class of bones specified, comes nearest to simple caries, is one that commences in the articular aspect of bones, and is often for a length of time—for months, I believe—confined to it; occupying, for this long period, the thickness of a line only, although eventually capable of spreading deeper into the bone.

I amputated the leg of a patient, 25 years of age, five months after a compound fracture of the tibia and fibula. The bones had shewn a disposition to unite, but the general inflammatory swelling of the limb which supervened upon the accident, never subsided. Large collections of matter formed in the calf of the leg and about the ankle. These were opened in succession, and the patient as many times rallied from the hectic fever and exhaustion which they produced. At last there formed above the knee-joint an extensive abscess, which was opened, when a profuse discharge of matter took place, and afterwards of blood and matter alternately. It was now that the limb was amputated, but too late to save the patient. In the knee and ankle-joints the cartilages were found partly absorbed, and what remained reduced to a thin shell. The articular aspect of the bone, which had become exposed, was highly inflamed. The narrowed and thin shells of cartilage which were left, were found to tear very readily from the bone: when torn off, the detached surfaces were found to be covered with bony particles, shewing that the separation must have been effected by rupturing the inflamed surface of the bone. On further examination, the whole articular aspect of the condyles was found to be highly inflamed and softened, for the depth of one to two lines. The bone beyond was perfectly healthy.

E. D., ætat. 20, was admitted in November 1833, into the Middlesex Hospital. Three years previously she had been attacked with pain and swelling of the left elbow-joint, which being treated with leeches and embrocations, went away in nine months. Shortly after her recovery the left knee began to swell at the lower and fore part; the swelling was attended with pain, which, although constant, was severe at times only: she thought it rheumatism, and wore flannel round the joint. A year before her admission the disorder in the knee became more serious; at times it confined her to her bed. The joint was hot, stiff, and painful. Several blisters were then applied in succession, and with some advantage. Leeches, fomentations, cold embrocations, bandaging, were tried, but were ineffectual. At the time of her admission, and for a month previously, she had been suffering the acutest pain, which the least pressure or motion aggravated to intensity. The knee was hardly swollen; it was a little bent. There was no impediment to further flexion but the pain it gave. The pain was severest beneath the patella; it extended through the thigh and leg. Having tried local bleeding, fomentation, a large issue, and opium, without any mitigation of her intense suffering, I amputated the limb.

Upon opening the knee-joint, the capsular synovial membrane was found to be inflamed and thickened, presenting a jelly-like granulated surface, which extended a little way over the cartilages of the condyles. The cartilages were but partially ulcerated towards the joint, and for a very small extent; but they tore readily from the bones. There were parts at which it was evident they had been already discontinuous, the surface of the cartilage being slightly excavated, and the opposite surface of the bone ulcerated, and extremely vascular. At other parts the cartilage tore away with it numerous granules of bone. This arose from the surface of the bone, for the depth of a line to two lines, having been highly inflamed, and softened in its texture. Beyond the immediate surface the bone was perfectly healthy.

The preceding form of disease, commonly attended with severe pain, is, I believe, always connected with inflammation of the contiguous synovial membrane. Rest, and blisters in the vicinity of the joint kept open by irritating dressings, and issues, form the appropriate local treatment of this affection, which, when taken early, may probably be subdued.

3. The common appearances denoting scrofulous inflammation in bone, are, soft-

ness from deficiency of bone-earth, increased vascularity of the medullary membrane, and, in the place of medulla, a thick reddish-brown fluid in the cancellous structure.

In the ankle-bones of a child six years of age, examined immediately after amputation, I found the following appearances. The cartilage covering part of the posterior and upper surface of the astragalus had been absorbed; the cancellous structure below it was superficially ulcerated, and for a considerable depth was soft, as if rotten, its cells containing a thick brown fluid. The texture of the anterior part of the astragalus was healthy. When a horizontal section of the os calcis was made, about a third of its substance appeared healthy; the remaining and greater part had the brown and rotten appearance and consistence of the astragalus. The lower extremity of the tibia was in the same condition.

Sir Benjamin Brodie thus describes the appearance of the elbow-joint of a boy about ten years of age:—

"The cancellous structure of the articulating extremities of the os brachii, radius, and ulna, was so soft, that it might be crushed by a very slight degree of force, when squeezed between the fingers. It was of a dark red colour, preternaturally vascular, and there was a reddish fluid, mixed with medulla, in the cancelli."

4. The appearance, which constitutes the most undoubted sign of strumous action, is the deposition in the cancelli of tuberculous matter—an unorganized substance, in colour yellow, and of the consistence of curd. The following instances are from Sir Benjamin Brodie's treatise on the Diseases of the Joints:—

William Miles, ætat. 23, underwent amputation of the leg, for disease of the knee. "On examining the knee, the articulating extremities of the tibia and fibula were found so soft that they were readily cut with a common knife; they contained much less earthy matter than is usual, and their cancelli were filled by a yellow cheesy substance."

Charles Miller, ætat. 20, underwent amputation of the foot. "The extremities of the tibia and fibula, all the bones of the tarsus, and the extremities of the metatarsus, contained much less earthy matter than is usual. They were so soft that they might be cut with a scalpel without the edge being turned. They were preternaturally red and vascular, and a yellow cheesy substance was deposited in the cancelli."

Strumous inflammation of bone is generally characterized by its insidious march, the gradualness of the local swelling, and the absence of pain which attends it. Even when the soft textures within the contiguous joint are in process of secondary ulceration, the suffering is often comparatively trivial.

There is no reason to doubt that the disease, in its early stage, may be arrested by judicious remedies, of which the principal local means is the maintaining perfect quietude in the affected joint; and the general means, the observing those rules of diet, and medicine, and general habits, and place of residence, which tend to correct the strumous diathesis. Even when the disease has strongly established itself in a joint, there is still a remedy in amputating the limb, which is unquestionably to be resorted to if the organization of the joint is completely destroyed, and the patient's health is rapidly failing, yet no vital organ seriously affected, and strength enough left to bear the operation. To decide upon the propriety of operating in cases of less urgency, is an extremely difficult task. In some cases, where the constitutional tendency to scrofula is slight, the patient has been permanently restored to health by losing a scrofulous joint. In other cases the local disease appears to be a vent to the specific action; and when that vent no longer exists, scrofula manifests itself in other more important organs, and the patient perishes but the more rapidly.

It may happen, however, that the organs invaded (upon this hypothesis) by the returning disease may not be vital parts. Mr. Cartwright amputated a scrofulous knee in a girl seventeen years of age. Shortly after the stump had healed, several large strumous abscesses formed in different parts of the body; they broke, and the patient was reduced to great exhaustion. Nevertheless she recovered, the strumous action having fortunately fallen on the intermuscular filamentous tissue only. When the disease attacks a small joint, it is probable that the patient is in less danger of a return of strumous action on its amputation. Disease of the joint of the ball of the great toe is such an instance. In this case the place of the disease renders the patient particularly desirous to have it removed. The operation is one often performed; besides the joint, as much of the metatarsal bone being taken away as is altered in structure. I was greatly disappointed, when a gentleman, upon whom I performed this operation, after recovering perfectly, and acquiring the appearance of restored health, was in a few months attacked with symptoms of pulmonary consumption, of which he died.

It seems natural to suppose, that if there is a doubt about amputating a scrofulous joint in a patient otherwise free from disease, it would, *a fortiori*, be improper to re-

move the part, when scrofulous disease has already manifested itself in other organs. But it has been instructively pointed out by Sir Benjamin Brodie, that the removal of a scrofulous joint will sometimes palliate, or arrest, existing scrofulous disease of the viscera. He narrates a very illustrative case in these words:—

"A young woman was admitted into St. George's Hospital, labouring under a scrofulous affection of the ankle. It was of long standing, and there were several abscesses communicating with extensive surfaces of carious bone. It was evident that there was no chance of cure for the disease in the joint. Nevertheless, I did not think it right to propose to the patient that she should submit to the loss of the limb, as she had a troublesome cough, with a purulent expectoration, and other marks of pulmonary disease. She, however, earnestly implored that the ankle might be removed; and at her request, and certainly against my own judgment, I performed the operation. The stump healed readily. The pulmonary symptoms almost immediately subsided. She lived for four or five years in tolerable health; but at the end of that period (as I have been informed) there were again manifest indications of disease within the chest, of which she ultimately died."

It is to be borne in mind, that in scrofulous affections of the joint, left to pursue their course, it is not the articular disease which is directly fatal. The patient through it, indeed, is debilitated,—exhausted with hectic fever; but that exhaustion has to produce disease in the mesentery or lungs, or in both, to prove the immediate cause of dissolution. The surgeon has then to consider whether the removal of the limb is most likely to avert the fatal visceral disease, by saving the patient from the exhaustion which promotes it,—or to accelerate its progress, by removing the vent for strumous action, which the diseased joint affords.

ON THE HYDRATED OXIDE OF IRON,

AS AN ANTIDOTE FOR ARSENIC.

To the Editor of the Medical Gazette.

Sir,

In consequence of some experiments which have been lately instituted by MM. Bunsen and Berthold, at Göttingen, from which they concluded that they had discovered an antidote for arsenic acid, in what they term the hydro-oxide of iron, I was anxious to determine how far the same oxide might be useful in rendering arsenious acid insoluble in the stomach. Upon reading an account of their experiments, as published in the Lancet, I was surprised to find that the arsenic, and not the arsenious, was the acid operated upon; because it is well known that the latter is constantly employed in this country for the purpose of destruction; and moreover, there are not more than two or three cases on record of poisoning by the former; and in these the acid was, I believe, combined with potass. The discovery of an efficient means of preventing the destructive effects of arsenious acid, has, indeed, long been a desideratum, but unfortunately, even those substances which are capable of forming insoluble compounds with this poison out of the body, such as sulphuretted hydrogen, lime &c., have by experiments, sufficiently often and carefully conducted, been found utterly useless when administered as antidotes; for even when previously combined chemically with the acid, so as to form such insoluble compounds, and introduced into the stomach, they have not been found capable of preventing the poison from manifesting its deleterious effects. But whether these effects be produced by any power which the stomach may possess of decomposing the substances introduced, and in that way setting free the arsenious acid, or whether the gastric secretions themselves be capable of exerting a solvent action on them, without any decomposition, and so allowing of their passage into the circulation, must, I fear, remain a matter of conjecture. Cases, indeed, have been recorded, in which life was apparently saved by the administration of such inert substances as charcoal, magnesia, &c., but there can be little doubt but that these acted by protecting the coats of the stomach from the action of the poison, until it could be removed from that organ. Should the following experiments therefore appear of sufficient interest, I shall feel obliged by your allowing them an early insertion.

I am, Sir,
Your obedient servant,
R. H. Brett, M.R.C.S.

Upper Sussex Place, Kent Road.

Experiment 1.—$2\frac{1}{2}$ grains of arsenious acid, of tried purity, were administered to a rabbit of moderate size, at 20 minutes after 9 A.M. No food was

given for the first six or seven hours, during which time the animal was quite lively. At the expiration of this period, a small quantity only of food was offered, and greedily swallowed. At half-past 10 P.M. the animal appeared well, but was found dead at 8 o'clock on the following morning. Upon examination, the external jugular veins in particular, and the whole venous system, were gorged with semi-coagulated blood. Internal mouth, pharynx, and œsophagus, as also the larynx and trachea, healthy. Lungs crepitant, and floating on water. The stomach was distended with food, and almost the whole of the internal surface, particularly about the cardiac end, of a vivid red colour, with an abundant secretion of mucus of a somewhat firm consistence. The mucous membrane in several places exhibited a dotted appearance, apparently from extravasation of blood into the submucous cellular tissue. The mucous membrane readily peeled off. Rectum, and other intestines, healthy.

EXPERIMENT 2.—Rather less than 2 grains of the poison were administered to a small rabbit, and three or four minutes afterwards 8 or 10 grains of the hydrated oxide of iron. This animal died in less than three hours, remaining throughout in a torpid state, but not apparently suffering from pain. Upon examination after death, the heart and venous system gorged with fluid blood; lungs healthy, as were also the œsophagus and trachea; stomach distended with food. There was a considerable quantity of mucus covering the lining membrane, which last exhibited no signs of inflammation. The rectum and intestines generally free from inflammation. It may be observed, that a small quantity of water was introduced into the stomach of this rabbit after the administration of the acid, and oxide of iron.

EXPERIMENT 3.—A portion of arsenite of iron was prepared by precipitation from the persulphate of iron by means of arsenite of potass. The precipitate, after being washed for some time with boiling water, was dried by a gentle heat. 5 grains were administered to a full grown rabbit, at 10 A.M. The animal appeared little or not at all indisposed until 6 P.M. when it became inactive and refused food. It continued in this state for two hours, when it made violent muscular exertions, and was evidently gasping for breath,—while it occasionally uttered a loud tracheal rattle. In a very short time it died. This animal could not be examined till some hours after death, when the pharynx and œsophagus were found healthy; larynx and trachea, as far as the bifurcation of the latter, much inflamed: the lining membrane was covered with a considerable quantity of mucus. Right lung morbidly red, and less crepitant than natural; venous system gorged with coagulated blood; stomach full of food; mucous membrane covered with a layer of mucus of so solid a character as to adhere and peel off in part with the contents of the stomach. This last was much inflamed, especially about the cardiac end, at which part some extravasation of blood had taken place beneath the mucous membrane. Rectum, and lower part of large intestines, healthy.

EXPERIMENT IV.—Six grains of arsenite of iron, mixed with about the same quantity of free oxide, were given to a full-grown rabbit; but as this was administered late in the evening, the symptoms and length of time taken to produce death could not be conveniently estimated: the animal was found dead early on the following morning. Upon examination, the venous system was found gorged with coagulated blood; air-passages and lungs healthy, as was also the œsophagus; stomach distended with food, and lined with mucus of the same character as in the last experiment. The cardiac end of the stomach was much inflamed; there were also patches of extravasated blood; intestines quite healthy.

The first experiment was made for the purpose of marking the morbid appearances produced by, and length of time necessary for, a certain dose of the poison to produce its effects.

An objection may, perhaps, be made to the second experiment, and it may be urged that had the antidote been administered in larger quantity, death would not have ensued. It is sufficient at present to observe, in reply, that the quantity of oxide of iron was more than sufficient to neutralize the arsenious acid, had chemical union taken place.

In the third experiment, the poison and antidote were given chemically combined, but still the animal died; as did also that in Experiment IV. where free oxide of iron was mixed with the arsenite of iron.

It now became an object of inquiry, Will arsenious acid and the hydrated oxide of iron combine, when suspended together in water, the temperature being favourable? What was the nature of the precipitate produced by the addition of arsenite of potass to the per-sulphate of iron, both before and after it had been well washed with boiling water, in which last state it was administered to the rabbits in Experiments III. and IV.?

A.—One grain of arsenious acid was dissolved in one ounce of boiling water, and the solution allowed to become cold. No crystals were deposited. Eight or ten grains of oxide of iron were then suspended through the solution, and the whole kept at a temperature of from 95° to 100° for nine hours; the fluid was agitated from time to time. The whole was then thrown upon a filter, and the filtered fluid found to contain an abundance of arsenious acid, as indicated by liquid re-agents.

B.—The same quantity of arsenious acid was boiled with eight grains of the oxide of iron in water, for half an hour. The filtered fluid gave equally abundant indications of the presence of the poison; the residue on the filter was washed with boiling distilled water, so long as the filtered fluid gave any indications of the presence of arsenious acid; the filter and its contents were then dried at a gentle heat: the residue, which was of the colour of oxide of iron, gave slight indications of the presence of arsenic when heated with charcoal.

C.—An excess of arsenite of potass in solution was added to a persulphate of iron; a fine canary-yellow coloured precipitate came down, soluble in the acids and in ammonia.

D.—A solution of arsenious acid was added to a per-sulphate of iron: no precipitate ensued.

E.—A solution of per-sulphate of iron was added in excess to one of arsenite of potass: the yellow precipitate obtained was collected on a filter and washed with cold distilled water; after some time the filtered fluid ceased to give indications of arsenious acid; the precipitate retained its yellow colour.

D.—A portion of the same precipitate was then washed repeatedly with boiling distilled water, and it was only after some hours that the filtered fluid ceased to give indications of arsenious acid; it gave no indications, however, of the presence of iron; the yellow colour was supplied by a brick-red one, similar to that of the oxide of iron; the precipitate was dried by a gentle heat; when heated with charcoal it gave proofs of the existence of arsenic.

From experiment A, it would appear that even excess of per-oxide of iron will not neutralize arsenious acid, even when this last is in solution, and the time allowed very considerable. It is clear, therefore, that no beneficial results can accrue from the administration of this substance as an antidote, in cases of poisoning by arsenious acid; for in such cases the neutralization of the poison ought to be immediate, and the circumstances are also exceedingly unfavourable for the action of the acid on the metallic oxide: even admitting that a small portion of these substances do unite chemically at such a temperature, the excess of uncombined arsenious acid would not fail to cause death.

In experiment B, the circumstances were still more favourable for the entire neutralization of the poison, the temperature being so high; but in that case, the yellow arsenite noticed in experiment E could not be formed, in consequence of its undergoing decomposition at a boiling heat, yielding up its arsenious acid; but still it might have been expected, that as sufficient oxide of iron was present, the whole of the arsenious acid would have combined with it, constituting the brown arsenite noticed in experiment D.

E.—In this experiment the yellow arsenite was formed, and found to retain its colour when washed with cold distilled water; to which fluid it does not yield up its arsenious acid: boiling water, on the contrary, decomposes the salt; depriving it of a very considerable quantity of its arsenious acid, and altering its colour. I am inclined to consider the yellow and the brown as two distinct arsenites, the arsenious acid in the former being in much greater proportion than in the latter. That the arsenious acid in the former is not in a state of mere mechanical mixture with the oxide of iron, is shewn by the colour of the compound; one of the strongest proofs of chemical union.

I have not had time to examine the proportions in which the acid and oxide unite in these two arsenites; but supposing, in the first case, that the salt

consists of two atoms of acid to one of base, the combining proportions would be 100 acid to 40 oxide. Still there would have been more than sufficient oxide of iron, both in the experiments on the rabbits as well as in those last detailed, to have combined with the arsenious acid employed; and the same may be said of the second arsenite, in which the proportion of arsenious acid is much smaller; for supposing that there were two atoms of base to one of acid, the proportions would be 50 acid to 80 base: the quantity of oxide of iron, therefore, employed in the experiments alluded to, was more than sufficient to allow of such a combination, and the consequent neutralization of the whole of the arsenious acid present.

From these experiments, I conclude that the hydrated oxide of iron cannot be administered as an antidote for arsenious acid with any chance of success, and that, like other reputed antidotes, it most probably acts by protecting the coats of the stomach from the action of the poison, and not by rendering the poison insoluble. From a few experiments performed on arsenic acid, I am inclined to believe that the same objections may be advanced as in the above instance; but further investigation is required to clear up that point.

REPORT OF

CASES IN WHICH ERGOT OF RYE WAS USED*;

With its Effects.

By Fleetwood Churchill, M.D.

Physician to the Wellesley Female Institution, Lecturer on Midwifery, &c.

The various opinions which have latterly been put forward as to the utility of the ergot of rye—its use in various diseases—the doses in which it should be given—with the good and evil effects produced by it—have induced me to throw together a few of the cases in which I have tried it, and of which I took accurate notes at the time. In many of these, and in some of those related by others, an important oversight has, I think, been committed, in not observing the pulse *immediately* after each dose. In two cases which I shall relate, we may observe that the primary effect of the ergot occurred very shortly after its administration, and was followed rapidly by another and very different state, which has usually been considered as its direct effect. All medicines of great power are liable to produce ill consequences sometimes, in connexion with the good derived from them,—sometimes as their sole effects: thus it is with ergot. We meet with cases where life is apparently preserved by it, without a single unfavourable symptom occurring; in others (as in Cases I. II. and III.) the object for which the remedy was given is attained, but distressing circumstances accompany it; whilst in a third class no good is done, and the evil alone is prominent.

Case I*.—Mary R., in her fourth month of pregnancy, was seized with hæmorrhage after fright. During this first attack, I was afterwards informed, she aborted. For some days I tried the ordinary remedies,—opium, an acid mixture, cold to the vulva, and plugging,—without success. After a short interval the flooding returned, expelled the plug, and reduced the patient to a state of anemia. Nothing peculiar was discovered by examination *per vaginam*. As no time was to be lost, I then gave her 3j. of the ergot in three doses, with intervals of an hour. The stomach retained the whole. No pain was felt in the belly for some hours, when she said she felt a slight sting. *The hæmorrhage stopped entirely.* The next day she complained of violent pain in the head, and became delirious for some hours. These symptoms were relieved by purgatives, shaving and blistering the head, &c., and she gradually recovered so as to sit up and walk about her room. In about a week, after some greater exertion than usual, she had a recurrence of the flooding. The ergot again relieved her, after opium and cold to the vulva failed; but it was followed by similar excitement, though in a much slighter degree.

Case II.—Mrs. F., two months pregnant, was attacked with hæmorrhage,

* Read at a meeting of the Association of Physicians, Dublin, Oct. 6, 1834.

* An abstract of my notes on this case was given by my friend and colleague, Dr. Maunsell, in a report of the Wellesley Institution, published in the Dublin Journal for July 1834. They were then introduced merely to shew the occasional bad effects of this remedy.

for which the usual means were employed. The next day (April 22, 1834) I saw her, as the discharge had recurred in an alarming degree; and I ordered 3ss. of ergot in two doses, with an interval of fifteen minutes between each. After sleeping awhile the discharge returned, and another dose (℈j.) was given with perfect success. She aborted, and *no hæmorrhage followed.* On the next day she was in a state of half-stupor, with violent headache, and weak, quick, depressed pulse. These symptoms yielded to appropriate remedies, and she recovered.

Case III.—Mrs. ——, in Leeson-Lane, after being safely delivered of a living child, on the expulsion of the placenta was attacked with violent hæmorrhage, for which the pupil in attendance applied cold to the vulva. When I arrived, I found her blanched, with very feeble pulse, and complaining of great faintness. I gave her 3ss. of the ergot, in two doses, with an interval of half an hour, and no stimulants. *The flooding entirely ceased.* On visiting her a few hours afterwards, I found her rather feverish; skin hot; pulse very rapid; and a very slight headache. These symptoms subsided without remedies, and she got well.

Case IV.—Mrs. ——, Stephen-Street, three months pregnant, was seized with flooding, and the fœtus was expelled, but no secundines; and I was called in. Cold had been applied to the vulva without effect, and she was much reduced by the bleeding. On examination *per vaginam*, I could distinctly feel the membranes within the os uteri, but could not extract them without introducing my hand, which I deemed inadvisable. One drachm of ergot was given in three doses, with half an hour's interval between each; and the pulse was carefully noted every few minutes. Five minutes after the first dose it had diminished six beats in frequency, and was weaker. From this point it gradually rose to its former standard; and this was exactly repeated with each dose. No excitement followed, and the patient perfectly recovered.

Case V. was a patient, Mrs. M., aged 45, in lingering labour of her first child. The parts were of proper size, but the uterine contractions decreased in force and number. After a considerable time had elapsed, and other means had been tried, 3j. of ergot was given in ℈j. doses, at half-hour intervals. The pulse, which beat 96 when the first dose was given, in five minutes fell to 69, and then gradually rose up to its standard at first; and this occurred with each dose. The pains were increased in frequency, but not in force, and the forceps was finally employed. There remained a sort of stupor over her after the ergot was given; but whether caused by that, or by the duration of labour, may be difficult to decide.

Case VI.—Mrs. —— aborted a fortnight before I saw her, and since that time had continued to suffer from a profuse sanguineous discharge, which reduced her considerably. I prescribed gr. v. of the ergot to be taken three times a day; and after taking four or five doses the flooding diminished, and soon ceased altogether. No bad symptom followed.

By way of illustrating the unmitigated ill effects of this remedy, I may refer to a case communicated to Dr. Maunsell by Dr. Johnson, related in the same number of the Dublin Journal, in which a double dose was given by mistake to a person in labour. No uterine contractions were produced, but the patient was attacked with "incomplete coma, livid face, and muttering delirium," which continued thirty hours.

From the cases I have related, may we not conclude, that the primary action of ergot of rye is sedative (Cases IV. and V.), followed quickly by more or less excitement, in some cases by delirium. How long this state would last, and whether it would subside spontaneously, we cannot say positively. In one patient (Case III.), where remedies seemed unnecessary, it did so subside; but in the others it would have been unjustifiable to have neglected the means in our power, and which were speedily successful.

I know not of any cases in which these symptoms proved very obstinate. The inference, therefore, that I would draw from these trials is, that as ill consequences do result from its use, it requires great care in the administration of it; but that its positive value is but little diminished, and its exhibition not interdicted by this circumstance; for we see that in two cases it probably saved the patients' lives, even where

it occasioned the appearance of head symptoms. In another case it rendered unnecessary the manual extraction of the secundines at an early period; and in a third it controlled a very obstinate menorrhagia. I fear that at present our knowledge of its effects on different constitutions is too limited to enable us to distinguish beforehand those cases in which ill effects may be anticipated. We ought certainly to abstain from its use in any case where there is cerebral excitement.

It is very desirable, whenever ergot is given, that an accurate estimate of the pulse at the time of administering it should be taken, and that notes of its frequency should be made every five minutes afterwards. I am unable to explain why the same doses should act so powerfully in one case, and not in another; for in the trials I made it was as fresh, and apparently as good, when given to one patient, and when ordered for the others. The mode of exhibition I adopted, was to boil the bruised ergot in a little water for a few minutes, then adding a little milk, to give both the decoction and the ergot. The addition of the milk renders it more palatable, and less likely to provoke vomiting. We should be careful, however, to increase the bulk of the medicine as little as possible, as that alone would irritate the stomach.

It will be observed that I always gave it (with one exception) in scruple doses; and I do not know whether, in cases of such imminent danger, we should be justified in giving smaller doses, as much more time would be required before the full effect would be obtained.

MODIFICATION PRODUCED ON CASTOR OIL,

IN PASSING THROUGH THE BOWELS.

To the Editor of the Medical Gazette.

Sir,

I shall feel obliged by your publishing the following remarks on the curious modification which castor-oil is capable of undergoing in the intestines. The experiments were performed for the purpose of determining a chemical distinction between the fatty masses occasionally found in the alvine discharges (a circumstance rendered highly interesting to the profession generally, since the publication of Dr. Bright's opinions on that subject), and the different forms which castor-oil is known to assume when mixed up with fæcal matter. It is well known that when the oil has been administered, either by the mouth or as an enema, it may be traced in the dejections under several modifications; sometimes resembling caseous flakes, or a soap-like scum, floating on the more fluid part of the dejection; occasionally it has been seen arranged in a form not unlike bunches of grapes, or more nearly of hydatids of a whitish colour: more generally, however, it is found mixed up with the fæces as a kind of emulsion, and in some few instances (of which the following case is an example) it has been discharged under the form of solid tallow-like masses.

A woman, about eight months advanced in pregnancy, was admitted, a a few weeks since, into Martha's Ward, (under Dr. Bright) labouring under constipation, frequent vomiting, and a burning sensation at the scrobiculus cordis. Some medicines were prescribed for her, and an enema of castor-oil was ordered to be injected. This was done; the injection did not return until the following day; it was mixed with feculent matter, and contained also a portion of the castor-oil: besides this, some solid tallow-like masses were found on its surface; these were given to me for examination, by Dr. Bright. The woman has never since passed a similar substance, and she is now convalescent.

Examination of the Fatty Matter.

1. It is a white soft substance, of a fœtid penetrating odour, sinking in water, insoluble in that fluid, although it causes it to form an imperfect lather when rubbed between the fingers; without any appreciable action on either litmus or turmeric paper.

2. Exposed to heat in a bent glass tube, it partly fuses, swells up, gives off water, and at a temperature just below that at which it changes colour, a little ammonia is evolved; and on increasing the heat, the semi-fused mass exhales a powerful odour of boiling "*soap-suds*," or "*lees*."

3. When boiled in alcohol of ·830, the fatty substance almost entirely disappears, and a solution is obtained,

which appears turbid, in consequence of numerous very minute flakes being in suspension; on cooling, the fatty matter is deposited as a light spongy mass (two or three times larger than the bulk of fat employed); this was redissolved in alcohol, filtered while hot, and, on cooling, numerous fine needles of stearine were deposited.

4. Another portion of the fat was placed in boiling liquid potass: it swelled, become amber-coloured, translucent at the edges, and eventually dissolved. By cooling, a white solid soap was obtained, soluble in water and alcohol, which afforded fine pearly flakes on the addition of an acid.

5. An alcoholic solution of the fatty matter was mixed with nitric acid, and set aside. In a few hours the surface of the fluid became covered with floating laminæ, of a yellowish colour and pearly lustre, bearing, at first sight, no inconsiderable resemblance to nitrate of urea. This crystalline matter, however, readily fused into yellowish oily globules.

6. Another portion of the fatty matter was boiled for some hours in water, acidulated with acetic acid; when cold, the whole was thrown on a filter, and well washed with distilled water. The fat had now assumed a yellowish tint, and lost the property it before possessed of forming a soap-like lather with water; it had also become perfectly fusible, at a temperature of 145°, appearing then under the form of a yellowish oil, of a peculiar rancid odour.

7. On submitting the fat (obtained in experiment 6, by boiling the original matter with an acid) to distillation, an oil was obtained in the receiver, which, when cold, became a striated crystalline mass, possessing an acid reaction and pungent odour; to this substance some recently-prepared protoxide of lead was added, and the mixture exposed to a temperature of 160°: a mass was obtained, soluble in cold alcohol; the alcoholic solution exerting an *alkaline* reaction on litmus paper, previouly reddened by an acid, and affording a copious precipitate of lead on the addition of liquid sulphuretted hydrogen.

From all these experiments, but chiefly from the reactions described in experiment 7 (which are quite peculiar to castor oil), I have scarcely a doubt that the fatty masses under examination were merely the oil which had undergone some change in the intestines; this change, I am inclined to believe, consists in a process of saponification: a portion of the oil, by combining with alkaline matter, as well as a little albumen, forming a solid soap, which is combined with uncharged oil in a state of minute admixture. I feel more certain of this fact, as I have since been able to form an artificial compound, much resembling the fatty masses. Both soda and ammonia, although in comparatively minute quantities, appear to be present in the fatty matter.

The following are the results of a quantitative examination of this matter.

Stearin and olein	39·00
Water, with traces of ammonia	7·80
Albumen	0.50
Soda	1·15
	48·45
Loss.....	1·55
	50·

I am, sir,
Your obedient servant,
GOLDING BIRD.

Guy's Hospital, Nov. 8, 1834.

IMPERFORATE ANUS SUCCESSFULLY TREATED.

To the Editor of the Medical Gazette

SIR,

SHOULD you deem the accompanying case of imperforate anus of sufficient interest to occupy a column of your journal, I shall be obliged by its insertion at your convenience.

I am, sir,
Your obedient servant,
ROBERT DYCE, M.D.
Assistant Staff-Surgeon.

Maidstone Barracks,
Nov. 3, 1834.

On the 5th of October last, I delivered a woman of a female child; the first of seven children born alive. The labour was natural. The following day a dose of castor-oil was given to the infant, which, not operating, was repeated at 3 P.M. the same afternoon. At my evening visit I found there had been neither water nor motion passed, which

led me to examine the anus. I found its form externally was tolerably perfect,—however, with rather a more ragged appearance than usual; but on introducing a bougie, it was stopped in its progress about an inch and a half from the external aperture. My finger, when beyond the sphincter, conveyed the sensation as of entering a vacant space, into which projected a small tumor. After some consideration, I introduced the canula of a trocar up to what appeared to be the impediment, and pushed the stilette on to its utmost extent; but no meconium followed. A medical friend of mine, who was kind enough to visit the child along with me, tried the same means, as also the introduction of a grooved needle, but with no better success. Our efforts also to hit upon the urethra were equally unsuccessful. It was then determined to wait the result of a greater distention of the gut, as no urgent symptoms had as yet shewn themselves. On Tuesday (second day) the child was reported to have had an uneasy night, to have vomited repeatedly, and latterly to have refused the breast. The abdomen was very tense and swollen, and the labia enlarged and livid. Nothing had passed either from the rectum or bladder. Another attempt was then made: I introduced my finger into the anus; the impediment was felt more distinct and prominent; a pharyngotomos was then passed flatly along the finger as far as the obstruction, and the lancet pushed firmly on. In a few seconds I had the satisfaction of seeing the meconium pass freely by the finger. A very slight hæmorrhage followed. A hot-water injection was thrown up, which brought off a considerable quantity of hardened meconium, with evident relief to the child.

Still no water had been passed; and every attempt, on this as on the former occasions, to find the urethra by a probe, was unsuccessful. A warm-bath was directed, and fomentations to the abdomen to be repeatedly used. A few hours after, the child was said to have had three blood motions, to have had no vomiting, and there was rather less tension of abdomen. At this time our attempts were renewed to open the natural passage to the urethra and bladder, and we were deliberating what had better be done in case of failure, when happily, on using some force by pressure with the probe, the resistance was overcome, and urine flowed freely. A dose of oil was now given, and the fomentations directed to be continued.

Wednesday (third day).—The abdomen was found still tense, though less so, and with some œdema of the lower part. The labia were less swelled and livid. The child had been easy, sucked well, and had three or four motions, less bloody and more feculent, but no water. A probe was again introduced, and easily entered the urethra. At this time a teacupful of high-coloured urine came off. For eight days from this period, the occasional use of castor-oil was all that was required; conceiving that free action of the bowels would keep the orifice in the rectum open, and obviate the necessity of using bougies. In this I was mistaken. The wound was evidently at this time contracting; the stools were thin, and in small quantity; a good sized bougie was therefore introduced twice a day for ten days, when, both functions being performed regularly, I desisted. The child has now, I consider, been well for the last week.

A similar case to this has been mentioned to me, as occurring in the practice of a civil practitioner within the last few days, where the trocar was also unsuccessfully used.

If a single instance in my own hands, and the report of a second case in those of another, would justify my hazarding an opinion, I would say, that, of the two instruments, the trocar and pharyngotomos, the latter is decidedly the preferable. From the elasticity and little resistance offered by the gut, and the trocar not having so keen an edge, it will be more likely, instead of entering, to push the gut before it, as must have happened to myself; whereas the pharyngotomos will penetrate freely, like a lancet, and has, besides, the advantage of enabling the operator to enlarge the wound by a crucial incision, by simply turning the flat surface of the instrument from off the finger, and introducing it at right angles.

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ON THE SPINAL NERVES OF THE TURTLE.

VALUE OF COMPARATIVE ANATOMY.

To the Editor of the Medical Gazette.

SIR,

IN the turtle, the anterior bundles of the cervical nerves are much larger than the posterior. Throughout the shell, nearly as far as the sacrum, the anterior bundles are only just discernible with a magnifying glass; the posterior appear, therefore, to form the principal part of each nerve. The anterior bundles of the sacral nerves, or those supplying the lower extremities, rectum, &c. are somewhat larger than the posterior. It is hardly necessary to remark, that in the neck and anterior extremities there are very large muscles, but very little integument. The principal portion of the dorsal nerves enters into the structure of the large shell, and these, therefore, require only a few filaments from the anterior surface of the spinal cord. The nerves given to the lower extremities have to supply a larger proportion of integument than muscle, as compared with those of the neck and the anterior extremities; and the posterior bundles of these are therefore larger in that requisite degree.

The arrangement of the different parts of this creature appears to me to support the doctrine setting forth the anterior roots of the spinal nerves as exciting motion, and the posterior as conveying sensation. Further dissections may shed a clearer light; this, however, may be sufficient for presuming that comparative anatomy may explain many dubious parts in physiology, as well as, or even better than, experiments on living animals. It may, therefore, be worth while to consider whether the neglect of this most copious source of useful knowledge reflects credit on the profession of this country, and whether groping in the pursuit of science by the random infliction of cruel tortures, is not one of the most humiliating expedients to which men of cultivated minds can have recourse.

I am, sir,
Your obedient servant,
JOSEPH SWAN.

6, Tavistock-Square,
Nov. 1, 1834.

CASE OF

MAL- OR TRANS-POSITION OF THE HEART;

WITH COMPLETE OBLITERATION OF THE GALL-BLADDER.

To the Editor of the Medical Gazette.

SIR,

EVER anxious to cast my mite into the treasury of useful knowledge, I send you the following particulars of a post-mortem examination, which, whether considered combined, or separately, presents an interest of no ordinary character, —facts of no common observation.

The distinguishing peculiarities of this examination, if viewed apart from each other, are unusual; but looking at them conjoined in the same individual, so far as my observations, and reading, and memory, can carry me, they almost bring me to the conclusion that they are without parallel; but in this respect I wish to speak with modesty, giving place to the more extensive opportunities and range of observation, which locality and circumstances afford to many of my seniors in the profession. In submitting them to publicity, sir, I have chosen the channel of your valuable miscellany, and should you consider them worthy of insertion therein, your early compliance will much oblige,

Your obedient servant,
HILDYARD M. LEPPINGTON,
M.R.C.S.

Great Grimsby,
Nov. 7.

Post-mortem examination of J. M. æt. 48, of short stature, broad set, very corpulent, and weighing about 22 stone.

On opening the chest, the first object which presented itself to my notice was the heart, lying directly transverse across the front, just beneath the sternum, having its base to the left and its apex to the right side. The organ was large; though not so when viewed in comparison with the other organs of the body, but taken separately it was. Its structure was soft, tearable, and what some anatomists might call ramollissement; not remarkable for fat, neither had the vessels nor valves undergone any particular lesion. The left ventricle contained some very dark blood, and the right was full; its character and consistence nearly resembling coal-tar, of a

thick, dark, grumous nature. His countenance, a few days prior to his death, indicated some obstruction or imperfect arterialization of the blood; for, on the least exertion, his face and ears were as if they had been dusted with soot, and so continued from half an hour to an hour afterwards. The pericardium was much distended, and contained a considerable quantity of serum. The lungs were somewhat displaced, and the left much larger than the right; they wore a dark mottled aspect, and the cellular structure throughout was expanded with serous effusion, the chest itself containing at least a pint of fluid.

Abdomen.—On examining the abdomen, the stomach, bowels, kidneys, and liver, all presented a flaccid, inactive, and unhealthy condition; their size was more than ordinary, and effusion had taken place throughout the cellular substance more or less connected with these organs.

Liver.—This organ attracted my attention: its appearance was the same as of the heart—large, pale, and soft; but to my astonishment, on looking to the situation of the gall-bladder, I found it completely obliterated, and nothing remained, save a small, soft, dark concretion, tinged with yellow, about the size of a horse-bean, and crumbling beneath the pressure of the finger and thumb—in fact, it scarcely amounted to a concretion—and a condensed corrugated imperforate mass: of course I could not trace any opening into the duct. The abdominal cavity contained, I think, at least two gallons of serum.

One great peculiarity in this case is, that during my professional attendance on him, which was the last year and a half of his life, he never complained of pain anywhere, except occasionally under the left breast, but never in the region of the liver. His bowels were easily acted upon; and if he had one action of the system which was natural, both for regularity and appearance, it was his daily alvine evacuations; sometimes they were rather pale. His tongue was certainly indicative of hepatic derangement, and he frequently underwent a mercurial course, occasionally extending to ptyalism.

It may be asked, was there any evident transposition of the heart during life? I frequently made an examination of the chest; but from the feeble action of the heart, and great density of fat covering the front and sides of the ribs, auscultation was rendered very ambiguous: nevertheless, I well remember more than once, when the pulsation was most distinct, to have observed and mentioned the existence of the fact.

When I saw him at the commencement of his last illness, Sept. 13, he had been bled by the advice of a physician the day previous, and had taken a small dose of elaterium, since which he had become much worse. I found him in a state of complete coma, speechless, with atrophy of the tongue, frequent paroxysms of dyspnœa, great torpor and inactivity throughout the whole frame, the pulsation at the wrist only 40, feeble and indistinct, no secretion from the kidneys, and unable to lie down. He took the pil. hydrarg. and pulv. seillæ, with a diuretic mixture, occasionally stimulants, and a blister applied to the back of the neck, which was kept open about a week or ten days, during which time his senses were gradually restored, the kidneys secreted, slight ptyalism was produced, but the pulse never exceeded 40; and what is still more surprising, the ensuing week it never exceeded 32 per minute; and during this time he could never assume the horizontal posture. Following up this line of treatment he somewhat improved; his pulse, though feeble, increased in frequency; he could lie down for about two or three hours; his appetite was good, and he was enabled to walk about the house and premises.

During the last fortnight he became anasareous; and on the Friday before his death, he had very sudden and extensive effusion into the cellular substance of the serotum and penis. I introduced a small trochar, and drew off, guttatim, three quarts of serum. This is not conjectural, because I had it secured as it came, and measured it. Into the penis I introduced the needles, from which operations he became much relieved, but died on the Sunday evening following, suddenly; this I always expected. Had I been disposed to tap the abdomen, it would not, taking the circumstances of the case into consideration, have been justifiable; for my patient was so fat in some parts of the abdomen, as to admit the scalpel three or four inches; and this quantity of adipose substance rendered fluctuation very

indistinct, if at all perceptible; moreover, the anticipated result did not inspire me with sufficient confidence.

Reviewing the history of this case, it furnishes us with the fact, that there was a predisposition to serous effusion, more or less, throughout the system, arising partly from his free habits during the early period of his life, his increasing obesity, and, from the nature of the disease, I suspected some hepatic derangement, although there were no existing local symptoms to guide me in a correct diagnosis, either as it regarded the true character of that derangement, or of its extent. When I visited him on the evening of September 13, it was evident that effusion had taken place within the thorax, the pericardium, and on the brain; and I considered that it had been somewhat accelerated by the previous depletion. Pursuing the line of treatment above laid down, the local symptoms show that the absorbents had been excited, and that some fluid had been removed: his senses returned; his tongue recovered its motion; he was enabled to lie down for two or three hours together; and in this state he continued till within about ten days of his decease, when the exhalants resumed their activity, but with increased power. He became anasarcous, and died as above stated.

At the suggestion of Mr. Hewson, of Lincoln, who saw the case with me a few days before death, in addition to the previous treatment, we applied blisters to the legs, from which an amazing quantity of fluid was discharged, and 3ij. doses of potas. supert. with a few grains of pulv. jalapæ, were given twice or thrice a-day. If I remember right, this mode of treatment is recommended by Drs. Blackwall and Mason Good.

ON BRONCHOCELE IN YOUNG FEMALES;

WITH REMARKS ON THE USE OF IODINE.

To the Editor of the Medical Gazette.

Sir,

To publish his observations in the profession, is the duty of every one, young or old: to resort freely and unabashed to the older and more experienced practitioner, for practical information, is the duty of the former; and as freely and willingly to bestow that information, is the duty, too, of the latter—as by this means he is fulfilling a part of the useful objects of his humane profession. As a junior in the profession, then, I beg leave, through the medium of your valuable periodical, to insert a few lines on bronchocele in young females.

I am induced to do this from reading the following passage in the excellent Dictionary of Practical Medicine, by Dr. Copland, which is now in the course of publication:—"In a considerable number of cases which have come before me in females, I have never met with any before the period of commencing puberty,—not even in the Infirmary for Children,—although the menses have often been delayed for a year or two, or even longer, when the tumor has appeared at this epoch; and I have seldom observed an instance in this sex unconnected with some kind of irregularity of the menstrual discharge, or disorder of the uterine functions."—Within the last month, I have seen five cases of its occurrence in young females—at least two of the five are nearly grown up; but I have particularly ascertained from their friends that the enlargements have existed since they were six or seven years old; three of the females are at the present quite young; one of them, nine years old, has had the disease three years; the other is six years old, and has had a very large neck some length of time; and the youngest (sister to the last), is not five years old: the neck is not very large, but there is every probability that it will eventually attain as large a size as her sister's. Cases of the disease in older persons are very common indeed; but I do not find that they are at all attended with, or rather, I should say, the consequence, of any irregularity of the uterine functions; and having seen several cases of the disease, I am inclined to conclude, that there is not any very great connexion between this disease and derangement of those functions, although, at first sight, it seems very plausible. Perhaps it is from local causes that cases of bronchocele in young children have not occurred in the metropolitan practice of Dr. Copland; for certain it is, that in some districts this disease is much more common than in others. From my own observation, it

is not common in the parts which I have visited of the counties of Warwick, Stafford, Worcester, and Buckingham. In Hertfordshire, on the contrary, it is very plentiful; and from its being commonly called the "Derbyshire neck," I suppose it is frequent, too, in that county. In some parts of Switzerland and Italy it is very common and endemical; in other parts of the same countries the people are comparatively free from it: it is there generally attendant on that terrible disease *cretinism*, both which have been so fully and ably described by Dr. James Johnson in his "Change of Air." I have noticed, that most of the persons I have seen with the disease are makers of straw-plait. I merely mention this circumstance: it would be difficult even for a theorist to frame a connexion here between the employment and the disease; still, however, a future observer may, perhaps, by some means, explain the fact.

A few days ago, Dr. Hooper told me he had very rarely seen the disease in very young females; and according to the best of his recollection, the youngest subject he had seen with the disease was eight or ten years old.

In the *treatment* of bronchocele, there can be little doubt of the efficacy of iodine: I have seen it used in several cases with the greatest benefit. The little girl who is six years old has her neck very much reduced in size from the iodine treatment. Care has been taken that the medicine should not be administered in such quantities as to produce any of the symptoms of an overdose, such as heat and sensation of weight in the epigastrium, and the other effects of too large a dose, which are so minutely described, in his work on Materia Medica and Therapeutics, by Dr. A. T. Thomson. Great caution is required, too, in giving the first few doses of the medicine; for the effects of the same dose, I have often observed, are very different in different individuals, and even in the same individual at different times. That this is the fact, is confirmed by the following passage in the work referred to:—"In irritable habits, even when the dose is not so large as to deserve the epithet overdose, it causes a febrile excitement, often accompanied with nausea, vertigo, and headache, and occasionally symptoms which resemble those of shaking palsy. When these occur, the use of iodine as a remedy should be suspended." And by the following case of Sir Astley Cooper's, in his Surgical Lectures:—"I witnessed, very lately, an instance of an overdose of this substance producing the most violent convulsive symptoms. The quantity of iodine taken was less than that which is often given, but it was an over-dose to this patient. There were forty drops of the tincture in a mixture of six ounces, and he was desired to take three table-spoonfuls three times a-day. He had only taken three-fourths of the mixture when he was seized with the most violent convulsions; his hands, legs, and feet, were kept in constant involuntary motion, and he declared that during the whole night he resembled a person in the act of fighting and wrestling." For this reason, the doses should be very small at first, and gradually increased. There are several tinctures of iodine used, and it is better, after making a trial of them, to adhere to one formula. I have used the tincture made by dissolving two scruples of the iodine in one ounce of alcohol, and have generally begun by giving six drops three times a-day, gradually increasing the dose to fifteen or twenty, according to the age of the person and other circumstances. I have used externally, either the ointment of the hydriodate of potash or of the iodide of mercury: the latter is very easily made, by rubbing equal parts of mercury and iodine together in a glass mortar, and adding half a drachm of the iodide to an ounce of lard.

Its occasional action upon healthy glands is a very important circumstance, and one which should be strictly attended to. Dr. Thomson, in vol. i. p. 344, says, "It is supposed that the nervous plexuses and the great sympathetic nerve are particularly acted upon by iodine; but its chief influence, as an excitant, is undoubtedly upon the absorbents, which it appears to urge to unusual activity, carrying off by their means not only diseased but healthy glands. During the continued use of iodine and its preparations, all the organic tissues (particularly the mammæ in women, and the testicles in males) waste; but no gland in the body is exempt from the action of iodine." Again, in vol. ii. p. 393, in the section on Diuretics, he writes thus:—"It is the only substance which seems to stimulate decidedly the absorbents; and their influence, when

thus urged, extends even to the healthy glands: both the mammæ and the testicles, free from disease, have, in several instances, nearly disappeared during its administration." It is reasonable to suppose that a medicine which will, through its action upon the absorbent system, reduce an enlargement of the thyroid, or of any other gland, and prevent the future morbid growth of that gland, or act upon healthy structures and prevent their regrowth; I say, it is reasonable to suppose that this medicine, in the same way, may prevent the full development of these parts in persons in whom they have not yet arrived at their full size: therefore, I would ask, is there any danger in giving the medicine for a great length of time to such young children?—because it is evident that the disease had better be left to take its course unmolested than that these healthy glands, when developed, should be absorbed, or any risk arise, from administering the medicine to young children, of interrupting the progress of their natural growth.

The two points, then, to which I would solicit the attention of others, are, 1st, the frequency of the occurrence of bronchocele in young females, and its connexion with uterine disorder; and, 2dly, the propriety or not of giving iodine to young children.

If any persons who may have observed and treated many cases of this disease, will take an early opportunity of communicating the results of their observation and practice to the profession, they will render a service to it generally, and to me in particular.

I am, sir,
Your obedient servant,
T. Herbert Barker.

Redbourn, Herts. Nov. 10, 1834.

EXTRACTS FROM A JOURNAL OF NATURAL HISTORY;

Kept during a Voyage from England to New South Wales, and on the return to England, by way of Batavia, Pedir Coast, Singapore, &c.

By George Bennett, Esq.

(For the Medical Gazette.)

On the 10th of March, in latitude 14 min. south, and longitude 20 deg. 7 min. west, at 3 P.M., I captured by the towing net a very fine specimen of *Janthina*, to the shell of which several very small *Anatifa* were attached by a very small peduncle. On placing the specimen in a glass of sea water, the animal floated by the vesicular appendage attached to the foot, and which was protruded in a similar manner when the animal was in the net, and being also never seen retracted when other portions of the animal were so, I do not consider the animal has the power of doing so: when this appendage was touched with the finger, the animal (when alive) retracted itself, but the vesicles remained unmoved even in the slightest degree. Cuvier seems to consider that the animal has not the power of emptying or filling it with water, but observes regarding the capability of the animal withdrawing itself into its shell, "il peut seulement le comprimer en le faisant rentrer dans sa coquille, ou l'abandonner à son elasticité naturelle en l'en laissant sortir."—(*Sur les Mollusques*, 4to. Paris, 1817.) It exactly resembles in appearance *froth*, and merits the appellation given to it by Fabius Columna, of *Spuma cartilaginea;* for, as Cuvier observes, although like foam, "leur parois sont quelquefois comme de cartilage, assez dures même vers la racine et la partie posterieure; plus molles, plus membraneuses, en avant et à l'extrémité. Dans d'autres individus, je les ai trouvées plus étendues et entièrement membraneuses."—*(Loc. cit.)*

It is mentioned by Cuvier that some individuals have been found in which this vesicular appendage has been found wanting, and considers that the only difficulty they experience is in keeping themselves upon the surface of the water; but as I have captured specimens without this appendage by the towing net, the similar method by which those with it have also been taken, I must only infer that they can float on the surface of the water equally with or without it, although it must be naturally supposed that the animal and its shell cannot be retained so long on the surface without as with it.

The shell of this animal is of a delicate and pretty form, and of a greater or less deep violet tint; some were white in a great proportion over the upper surface of the shell, and these shells are only found floating on the water at great distances from the land: it has occa-

sionally also, I believe, been captured about sea-weed, but this is of comparatively rare occurrence.

The animal is among the *Tracelipodous* animals.

The animal, with its beautiful lilac-coloured shell, and transparent bubbles, afforded a very interesting object when viewed floating in a glass of water: the little barnacles about its shell also displayed vitality, by thrusting out and withdrawing its minute tentaculæ in a beautiful stellated form, somewhat resembling the zoophytes which produce the elegant corals.

When a fly perched and ran about the vesicular appendage, which projected above the surface of the water, it did not produce any effect, so as to cause that appendage (allowing the animal to have the power) to be retracted within the shell.

On the animal being touched in ever so slight a degree, it produced the effect of causing it immediately to withdraw itself into the shell, and even at first on any person moving near the glass of water in which it floated; but then the frothy appendage always remained stationary. It was nearly two hours after it had been placed in the glass of water before the animal became so bold as to protrude the whole of the upper portion.

In the evening I found the specimen of *Janthina* dead.

The view of this pretty shell and animal, together with the parasites attached to it, excited much interest by their beautiful appearance, by far exceeding either the engraved representations, or specimens preserved in alcohol.

March 16th.—On looking this evening at the specimen of *Janthina* in spirits, I found the shell and soft parts, which before had been suspended in the alcohol by the vesicular appendage, sunk to the bottom of the bottle, and the vesicular appendage detached from the animal floating still upon the surface: it was not separated by any injury, as the bottle had not been moved since the last time I saw it suspended, as when first placed into the spirits.

In a note, at page 108, vol. ii. of Lyell's Principles of Geology, it is mentioned that Mr. Broderip possesses specimens of *Janthina fragilis*, bearing more than one species of barnacle (*Pentelasmis*), presented to him by Capt. King and Lieut. Graves. One of these specimens, taken alive by Capt. King far at sea, and a little north of the equator, is so loaded with those cirrhipeds, and with numerous ova, that all the upper part of the shell is invisible.

At 6, P.M. a number of the luminous rose-coloured *Medusæ* were taken.

At 8, P.M. several *Phyllosoma* of the species *commune* et *clavicorne;* and several triangulated crustaceous animals in some degree resembling young specimens of *Hylæa dentata*, and a small bronze-coloured fish.

There are occasional sparklings and flashes of light after dark occasioned by *Pyrosoma*, *Medusæ*, *Salpæ*, and other luminous molluscous animals; but on placing the towing net over the stern of the ship where the luminous appearance was strongest, it appeared to pass through the luminous masses, but not a specimen was caught, which I can only attribute to their swimming deeper.

At 9, P.M. a very large quantity of *Phyllosoma*, (species *commune* et *clavicorne*,) but all of small size, were in the net: there were at least several hundreds, and a repetition of throwing the net overboard always brought up large quantities in a short time, so that large shoals must have been near the ship at that particular time. This I have often remarked as occurring with the *Pyrosoma*, *Smerdis*, *Salpæ*, &c.

March 12th.—Fine and calm weather. Lat. 00° 52′ N. and long. 21° 15′ W. A large bird of a heavy flight, like a gannet, was observed at some distance from the ship, and was not sufficiently near to enable me to ascertain what it might be.

Two of the "Stormy Petrel" (*Procellaria pelagica*,) "Mother Carey's chicken" of seamen, were also flying about this morning. I observe in a newspaper that "in December, 1833, by reason of the late heavy gales at sea, the stormy petrel has been seen on the river Thames above London, and shot." —Although we now saw these little harbingers of wind and storms in the latitude of calms, &c. yet, when in higher latitudes, with strong south-west winds, not one was seen, or any indeed even to the Channel, except these just mentioned.

14th.—Fine weather, with light airs from the northward, and calms. Lat. 1° 27′ N. and long. 22° 34′ W. Several stormy petrels were flying about the ship; and in the evening I caught a

small luminous *Salpa*, which gave out, when touched, a beautiful bright light, not diffusing itself over the animal as I have usually observed, but in rapid streaks like lightning, having a fine effect: it was so brilliant that the phosphoric light could be distinctly seen even by lamp-light, and the more the animal was disturbed, there was an increased vividness of light, but invariably in the streaked form just mentioned.

16th.—Lat. 1 deg. 38 min. north, long. 23 deg. 30 min. west. A white shark was seen about the ship early this morning, with the usual accompaniments of pilot and sucking fish.

At 6, P.M. I caught a specimen of the molluscous animal allied to *Leptocephalus*.

At 8, P.M. I took several small luminous transparent *Madusæ* and *Salpæ; Alima hyalina*, *Smerdis armata*, *Phyllosoma commune*.

There were also three specimens of *Cleophora:* these shells are so easily broken, that the greatest care is required to take them out perfect from the net.

Both at 8 and 9, P.M. large quantities of small specimens of *Phyllosoma* were captured in the net.

17th.—Lat. 2 deg. 00 min. north, long. 24 deg. 22 min. west. At 4, P.M. I caught another of the mollusca allied to the *Leptocephalus*, and the first I ever yet procured during daylight: this specimen measured 6⅜ inch in length, and half an inch in the greatest breadth: there was a continuous black line (very narrow) both at the upper and lower part of the animal, and another similar, extending the whole length of the centre. The animal was alive when caught, but died almost immediately after. On its death, the black lines were very indistinctly seen.

At 8, P.M. I caught some luminous *Salpæ* and *Medusæ*. There was also a specimen of *Cleophora;* and two specimens of minute spiral shells of a reddish brown colour. Some of the *Hyalæ tridentata* were also taken.

18th.—Lat. 2 deg. 20 min. north, long. 25 deg. 26 min. west. At 11, A.M. I found in the net a fish measuring five inches in length; a dark blue line on the upper part of the back, remainder of the body silvery. There was also another fish, 1½ inches in length, with purple back, and silvery sides and abdomen; two spines at the posterior and two at the anterior part of the branchial apertures: the tail was spotted with black.

There was also taken a very minute specimen of *Janthina* and several *Porpita*.

22d.—Lat. 7 deg. 12 min. north, long. 32 deg. 33 min. west. At 7, P.M. until 10, P.M. large quantities of the *Smerdis communis* et *armata* were caught, evidently being large shoals of them about the ship. A small flying fish was also caught.

31st.—With the Sargasso weed a large crab was caught.

At 8, P.M. I captured in the net several small luminous transparent *Medusæ* and *Salpæ*, and also several small bronze-coloured fish, lat. 22 deg. 16 min. north, long. 41 deg. 6 min. west.

April 1st.—At 8, P.M. among some Sargasso weed in the net, I found two specimens of *Sepia*, of a purplish colour; two specimens of the "bronze-coloured fish," one 3½ inches long, and ⅞ of an inch at the greatest breadth.

At 9, P.M. with some weed, was a small specimen of *Leptocephalus*.

2d.—Ther. 70 deg. to 74 deg. Lat. 24 deg. 33 min. north, long. 43 deg. 22 min. west. I found a number of crabs and shrimps among the weed.

A small dolphin was caught this morning: in its stomach was a half-digested flying fish. Several long slender *Filaria* were also found there.

Among the Sargasso weed I found circular clusters of yellow ova enveloped in a transparent gelatinous substance, and which may probably be those of *Scyllæ pelagica*.

3d.—Ther. 71 deg. to 74 deg. Lat. 26 deg. 9 min. north, long. 43 deg. 00 min. west. At 8, P.M. I found some Sargasso weed in my net; several of the small fish similar to those before caught; and one also short, thick, and of peculiar form.

4th.—Ther. 69 deg. to 72 deg. Lat. 28 deg. 6 min. north, long. 42 deg. 46 min. west. On the Sargasso weed, besides numerous small crabs (some of which had black ova in the usual situation,) were also green, yellow, and red-coloured shrimps. Many of the leaves and berries of the Sargasso weed were encrusted by some crustacea of a minute kind.

5th.—Ther. 68 deg. to 72 deg. Lat. 29 deg. 17 min. north, long. 42 deg. 57 min. west. At noon, among a mass of Sargasso weed, in my towing net, I

found a large specimen of a crab prettily mottled, with reddish brown and white.

There was also a fish of a whitish colour, with irregular black spots: it was of large size.

At 1, P.M. I captured in the net, with as usual abundance of Sargasso weed, a fine specimen of *Syngnathus*, or pipe-fish. It was of an olive colour above, and a beautiful golden beneath, with white lateral marks nearly the whole length of the body. It survived for some time out of the water, after it was caught.

At 3, P.M. I caught another large crab similar to the one mentioned above, but not quite so large, among the Sargasso weed.

Soon after I found in the net a fine and large specimen of *Physalis pelagica*, adorned with the usual beautiful tints, but not so vivid as I have usually seen them. The tentaculæ were for the most part broken, that is, the long filiform ones, the short and thick kind remaining perfect: the longest of the former were nearly four feet. The length of the bladder portion of the animal was $5\frac{7}{8}$ of an inch; and the greatest diameter 3 inches, and the greatest height $3\frac{1}{2}$ inches.

The application of cold water seems to renew the irritative effects of the acrid fluid emitted from the tentaculæ of this mollusca, even when the first pain has in some degree subsided.

At 5, P.M. besides a quantity of shrimps among the weed, there was also a small triangular *Salpa*.

At 6, P.M. I caught among the weed a very small fish, not unlike an embryo specimen of the "flying gurnard," being of a red colour, with black marks.

6th.—Lat. 30 deg. 21 min. north, long. 44 deg. 7 min. west. About noon, among the Sargasso weed, with as usual numbers of shrimps and crabs, I caught a *Syngnathus*, or pipe-fish, similar to the one caught yesterday, but smaller in size.

At 1, P.M. I caught, with the weed, another of the embryo fish resembling the *Trigla volans*, or flying gurnard, and similarly marked to the preceding, and which expanded its pectoral and ventral fins in a very pretty manner when placed in spirits.

A small *Sepia* of a fine purple colour, with dark red spots, was also caught; and a large crab, mottled with reddish brown and white, similar to those previously captured.

At 5, P.M. the net contained among the weed a purple *Sepia*, similar to those caught before, together with numerous crabs and shrimps; and a small fish, with purple back, and silvery sides and abdomen.

7th.—Ther. 66 deg. to 68 deg. Lat. 30 deg. 36 min. N. long. 43 deg. 22 min. west. At 2, P.M. I found among the weed in the net, besides several species of crabs and shrimps, and one of the small purple *Sepiæ*, with dark red spots, a large crab, similar to those previously caught, but with a mass of ova in the usual situation: attached to the upper part of the shell was an *Anatifa*, of a blackish colour, partly edged with white. There was also a minute fish, of a beautiful purplish colour.

At 3. P.M. I found among the weed another crab, mottled with reddish brown and white, but of much larger size than the preceding specimens caught: it had also a parasite attached to the dorsal shell, similar to the one before taken, but smaller.

Besides the great numbers of small crabs and shrimps seen about the masses of the Sargasso weed, several of a very pretty striated species of *Anatifa* were seen attached to it.

A CASE OF CONGENITAL DEFICIENCY OF BOTH THE UPPER AND LOWER EXTREMITIES*.

By J. F. E. Hardy, M.D.
Of Ashville, North Carolina.

The subject of this deformity is a young woman, aged about 20 years. She was born without either upper or lower extremities, the situation of which is merely occupied by small rounded projections. The stumps of the shoulders are remarkably small and short; those of the thigh are much larger, but are not more than two inches in length. I think her mother has had twelve children, but she is much larger than either of her brothers or sisters. She is, indeed, of a full and plump habit, and possesses a peculiarly lively disposition.

* Communicated in a letter to the Editor of the American Journal of the Medical Sciences.

Her power of locomotion is remarkable. She can transport herself over the floor with considerable ease, which she does by submitting her body to a kind of rotatory motion alternately from right to left, and the contrary. By confining the handle of a broom between her chin and shoulder, she can sweep the floor with considerable dexterity. She can also sit erect, lean back, or rock herself in a chair, as well as another person; and when any thing is given her, she makes a sign for it to be placed upon her shoulder. If it be any solid article of food, she eats it from that situation.

Her hips and nates are remarkably full and large, and are almost square. Her breasts are also voluminous, and remarkably plump, presenting all the characters of the mammæ of a stout young female of her age. Her catamenial discharge is regular, and of the natural quantity.

The annexed woodcut will serve to convey a more accurate impression of her general appearance, than could be communicated by any description.

This defective evolution of the extremities has been observed under various degrees. Saxtorph * has reported a case in which even the os innominatum was absent; and one has been described by Martin *, in which the outer third of the clavicle was wanting.

More frequently, the pelvis and shoulders are properly formed, but the rudiments of the extremities merely represent small excrescences or projections, covered with a smooth skin, and with or without nuclei of bone within. Cases of this kind have been reported by Buchner, Duverney†, Isenflamm‡, Dupuytren §, and others.

Still more frequently there is an absence of the arms, forearms, thighs, and legs; but the fingers and toes exist in a rudimentary condition, and are implanted directly upon the trunk of the body; or the hands and feet are still more perfect, but have the same kind of connexion. Examples of various modifications of these conditions have been communicated by Caldani‖, Dufraigne¶, Dumeril**, Dumas††, Meckel‡‡, Flachsland§§, Bouchard, and others.

In all cases of the kind, the defect is owing to an arrest of development taking place before the different parts of the fœtus are evolved; and it will vary in degree, according to the advances made by the process of development, at the period at which the interruption takes place.

* Gesamm. Schriften von Scheel, Kopenh. 1803.

ANALYSES AND NOTICES OF BOOKS.

" L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

The Study of Medicine. By JOHN MASON GOOD, M.D., F.R.S., &c. &c. *improved from the Author's Manuscripts, and by reference to the latest advances in Physiology, Pathology, and Practice.* Fourth Edition, by SAMUEL COOPER, Professor of Surgery in the University of London, &c. &c.

MR. COOPER informs us in his preface, that "much time and labour" have been

* Journal de Med. tome 23, p. 458.
† Comm. Petrop. I. vi. p. 149.
‡ Isenf. and Rosenm. Beitrag f. d. Zergl. Bde. I. p. 268.
§ Bullet. des Sc. t. iii. p. 126.
‖ Memorie di Padova, 1804, p. 103.
¶ Journ. de Med. 1782, Dec. p. 517.
** Bullet. de la Soc. Philomat. t. iii. p. 122.
†† Principes de Physiol. t. iii. p. 163.
‡‡ Handbuch der Pathologischen Anat. Bde. I. p. 748.
§§ Observat. Anat, Path. 1800, p. 44.

expended on the present edition of the work before us; and while we give the learned editor full credit for his assertion, we may safely add, that they have not been expended in vain. Every page bears evidence of the care with which the revision has been conducted, and the mass of additional matter which has been either dove-tailed into the text [with brackets of acknowledgment], or appended in the shape of notes, is really prodigious. Another great improvement is, that the number of volumes is reduced from five to four—a change which appears to have been accomplished, notwithstanding the additional matter, by increasing the size of the page, and the employment of a type which is exceedingly distinct, and yet marvellously absorbing.

The work is altogether completely modernized, containing all the improvements and novelties in medicine down to the latest date. As an illustration, we observe an account of the *Acarus scabiei*, quoted from the number of this journal published the 4th of last month; and here we must also express our approbation of the minute, and apparently very faithful, manner in which references are made to authorities. The Cyclopædia of Practical Medicine, the Edinburgh Medical Journal, and the *London Medical Gazette*, are incessantly quoted on points of interest. The "Study of Medicine" is thus brought up to the highest standard of the present day, and, as a work of reference at once systematic and comprehensive, has no rival in medical literature.

We shall probably insert from time to time some of the more interesting notes: at present we subjoin the following as a specimen. It contains the particulars of a very curious case, in which numberless portions of tape-worm have been voided from the bladder—perhaps in consequence of a fistulous communication between this viscus and the intestinal tube?

Case in which portions of Tænia have been, and continue to be, voided from the Bladder.

"The Editor, through the kindness of his friend, Dr. Docker, late of Canterbury, has been furnished with the particulars of a young woman, upwards of twenty years of age, who has been under the care of Mr. Law, of Penrith, in Cumberland, since October 1830, and has discharged several thousand portions of tænia from the meatus urinarius. In a letter, dated Penrith, Aug. 29, 1833, Mr. Law states, that "she first felt a sensation like that of a rupture of the bladder, when in the act of stooping to cut a corn, in August, 1829. From that time she had discharges of bloody urine occasionally, with the sensation of something moving in the bladder, more particularly so after each evacuation, and had concluded that this was a worm. However, no mention was made of this to any one, although her health was impaired, until I was called to attend her for an attack of laryngitis, in October, 1830. Blisters being used, brought on retention of urine, with cystitis, which rendered the use of the catheter necessary. After this had been conquered, she mentioned her feelings and apprehensions to me, which for some time I treated as imaginary, till at length, from the greatly disturbed state of the mucous membrane of the bladder, evidenced by deposition, in large quantities, of a white sediment in the urine, I was led to try the exhibition of spirit. terebinth., both by the mouth and injection. Great irritation ensued, but a small portion (about eight joints) of tænia was discharged, per urethram, alive. This led me to the determination to try the effect of opiate solutions, frequently injected into the bladder, which, by keeping the worm constantly under its influence, might destroy it. This, persevered in for three days, answered the purpose; all motion of the worm ceased; and, by an expansion of the urethra, its discharge was effected in large quantities, but in so decayed and broken a state that its parts could not be numbered; but I am certain that there could not have been less than 2000 joints. With these there was much hæmorrhage, also membranes and other substances. From this date (January, 1831) to the beginning of April of the same year, there were not indications of more tæniæ; yet the urine was generally tinged with blood, and deposited the white sediment in less quantities than formerly. During this period, an anodyne injection had been used almost daily, as the irritation of the bladder was considerable. At this time she again felt the motion of tæniæ, and I again resorted to frequent opiate injections, but without success for some days, and then determined upon the administration of spirit. terebinth. by the mouth; a teaspoonful of which was taken on the morning of the 18th of April, and which passed by the bladder in an hour and a half, bringing off some portions of the worm in a recent state, with a net-like membrane. From this date to September 20th, there were passed from the bladder, per urethram, 1239 joints of different sizes, from

one-third to the eighth of an inch in width, and which were all preserved, with portions of a net-like membrane, and fungi, either like the liver or the muscles of a fowl, and sometimes of a fleshy fibrous substance, having the appearance of the muscular coat of the bladder, with a shaggy surface on one side, resembling the villous coat of the intestines. These were brought away almost daily, while the urine diminished in quantity, rarely exceeding four ounces in twenty-four hours. A pause ensued from the last date to November 16th, of the same year; during which time neither worm nor substances passed off, but the fluid discharged was bloody, and always highly offensive. On this day the spirit. terebinth. was again administered, and brought off in an hour two small pieces of net-like cellular tissue, with nine joints of middle-sized worm interwoven with it. From this time to January 18, 1832, there were 773 joints preserved, of different sizes, and these were generally accompanied with membrane and fungi of different kinds. From this date to March 27th, there were no portions of tænia passed; but on that day the spirit. terebinth. was again taken, and before May 1st, 853 joints passed, making a total of 2865 now in my possession, besides a very small and apparently perfect worm of twenty-nine joints. During the period mentioned there have been at different times profuse hæmorrhages from the intestines, surmised to arise from the ascending colon, which have reduced my patient to a very weak state. She is now (August 23) in tolerable health, but again bringing away, from the use of the spirit. terebinth., more tæniæ. On the 21st instant there came off four joints of a small worm, with two small fungi.

"Among the singular and unaccountable phenomena accompanying this affection, is the rapidity with which spirit. terebinth. now passes from the stomach to the bladder. It is invariably felt in the bladder in less than twenty seconds from being taken; and its evacuation, per urethram, rarely exceeds two minutes: on one occasion it passed in one minute and a quarter; and from the recent appearance of the worm and fungi, seems to separate them in passing.

"Mr. Docker is in possession of some specimens of the worm, fungi, and membranes."

In a later communication to Mr. Docker, the following additional particulars of this remarkable case are given:—

"Tuesday Evening, April 15th, 1834.

"I am very sorry that I have hitherto been unable to send you the specimens of tænia, &c. as you requested, and now do so in a great hurry, in order to avail myself of a gentleman's visit to London, who has kindly offered to take a box for me. My engagements, during the absence of my young man at Edinburgh, were so many, that I could not find time to make a selection of my tæniæ, &c. for Mr. Cooper until his return, and now send you a few specimens of the different sizes, with those of the fungi, muscular substances, as I call them, and the net-like membranes. I also inclose a copy or two of my memoranda regarding the effects of the spirit. terebinth., and also the results, for a few days (which may be taken as a fair sample of the whole). You will see by the former the rapid passage of the spirit. terebinth. from the stomach to the bladder, and the increase of that rapidity by degrees to its present point, about eight seconds, and its evacuation in less than a minute, when the orifice is not obstructed by much substance. This is an interesting phenomenon, and worthy of the particular attention of the anatomist and physiologist. As you have been an eye-witness, with many other medical men, it is a fact which can admit of no doubt. The second phenomenon is also remarkable and interesting: the small secretion of fluid by the kidneys. This is always increased by the spirit. terebinth. on the day following its exhibition."

By the table which is annexed to the communication, it appears that the dose of turpentine always produces a peculiar sensation in the bladder in a few seconds, and the evacuation of portions of worm in a few seconds more.

A Treatise on the Diseases of the Chest and on Mediate Auscultation. By LAENNEC. *Translated, enlarged, and improved, by* JOHN FORBES, M.D., &c. Fourth Edition.

It would be superfluous, we think, to offer our readers any detailed account of this justly-celebrated work. The appearance of a new and cheaper edition shows the demand in which it has been held among the booksellers—a good test of the increasing popularity both of the subject and the treatise.

Dr. Forbes has introduced a great quantity of new matter in the notes, and has availed himself freely of the labours of his learned contemporaries: to Dr. Hope and Dr. Williams, we perceive, he acknowledges himself specially indebted, and in return recommends their respective works to all who are interest-

ed in the modern method of investigating chest diseases. Appended to the chapter *on the motions and sounds of the heart*, we find an excellent summary of all that has been said of late by various theorists and experimentalists touching this still obscure subject. What Dr. F. says, in conclusion, relative to Magendie's theory, we shall extract.

"Since the first announcement of M. Magendie's views respecting the causes of the sounds of the heart, two years since, by M. Pigeaux, this distinguished physiologist has himself published his opinions on the subject, and which, if they were formerly and are again correctly reported, seem to have undergone a very important change. (See a translation of M. Magendie's memoir in the MEDICAL GAZETTE, June 28, 1834.) He now attributes the *first sound* to the shock of the apex of the heart against the walls of the chest during the *systole* of the ventricles, and the *second sound* to a similar impulse of the anterior surface of the right ventricle during the *diastole* of the ventricles. The principle of the generation of the sound is indeed still the same, but the causes of the individual sounds are in some degree reversed. Against the truth of M. Magendie's principle many arguments may be adduced, and even, it would appear, some well-ascertained facts. I shall here state a few of these, for the substance of which I am indebted to my friend, Dr. Williams, the ingenious author of the first portion of the present note.

"1. In the experiments by Dr. Hope, the impression on Dr. Williams's mind is, that he distinctly heard the two sounds of the heart when this organ was removed from all contact with the thoracic parietes and the pericardium, and when the constant and close apposition of the stethoscope precluded the possibility of any sound being produced by any shock against it: and it will be seen hereafter that M. Bouillaud's conviction is similar.

"2. To say nothing of the inconclusiveness of any arguments deduced from phenomena elicited under such an unnatural condition of things as existed in these experiments, it may be remarked, that the third and fourth are subject to fallacy, inasmuch as 'the sonorous bodies' and 'the sternum of the goose' might have given rise to sounds in consequence of the existence of an interval between them and the heart; a state of parts very different from the natural, in which the heart and the walls of the chest are in apposition, and which unnatural state of parts might have permitted the organ to communicate a shock to the bodies, utterly impossible in the natural state.

"3. The facts adduced in the memoir after Exper. 4, and the 5th and 6th experiments, merely indicate that the sounds of the heart cannot be heard through a considerable layer of air, water, or healthy lung—facts long known; but M. Magendie has yet to prove that any injection of air or water, separating the heart from the walls of the chest, will prevent these sounds from being audible over the left clavicle.

"4. How will M. Magendie explain, in accordance with his views, the incontestible facts of the increased loudness and diminished impulse in dilatation, and the converse in hypertrophy? or the intensity of the sounds in the carotids, and at the top of the chest, in aneurisms of the arch of the aorta and innominata, in which cases they are often heard more distinctly than in the region of the heart itself?

"It would further appear, that since M. Magendie's paper was read before the Institute, M. Bouillaud has performed a series of experiments, with the same object, but with results the reverse of those announced by Magendie. The results of M. Bouillaud's experiments was, that he could always hear the two sounds of the heart although there was no point of contact between the organ and any portion of the walls of the chest. He, indeed, found that the friction of the heart against the end of the stethoscope gave rise to a particular sound; but this (merely a sound of rubbing) was so very different from the natural sound of the heart that the two could never be confounded. It was, moreover, ascertained that the momentary pulsation of the empty organ, after it was separated from the body of the animal, was accompanied by no perceptible sound. M. Bouillaud's own opinion respecting the cause of both the sounds, is, that they are owing to the play of the valves of the heart. (Journ. Hebdom. quoted in Med. Chir. Rev. July 1834.) In reference to this opinion of M. Bouillaud, as also to that of Dr. Hope, I would observe that they both possess a degree of probability in my mind over all those which attribute the two sounds to *two* different causes. Although certainly characteristically different, yet the two sounds have so great a similarity, and are so allied in time and place, that I cannot readily bring my mind to believe that they do not both depend upon one and the same cause slightly modified, or, at least, on the different play of the same parts. But the whole subject wants fresh investigation and the institution of a new set of experiments on large animals,—an investigation which cannot be entrusted to better hands than those of Dr. Hope and Dr. Williams."

The value of the present edition, we

should add, is greatly enhanced by the ample bibliography annexed to each article; and, on the whole, we must say, that the style in which the work has been brought out, is highly creditable to all parties.

Elements of Anatomy. By Jones Quain, M.D. Third Edition, revised and enlarged.

We gave our opinion of this work on a former occasion, and have now only to express our satisfaction, that what we then said has been fully borne out since by the public favour. It is a strong testimony to the merit of these Elements, that two editions have been already exhausted, and that a third comes forth in an enlarged form. The view of general anatomy in the introductory chapter, is full, clear, and comprehensive; and the arrangement of the several compartments of the descriptive portion is as convenient as can be wished. The book, besides, is furnished with good indexes, and ample references to works of authority, native and foreign.

The Surgeon's Practical Guide in Dressing, and in the methodic application of Bandages. By T. Cutler, M.D.

This appears to be a valuable little treatise. The author seems to have spared no pains in procuring correct descriptions of all the surgical apparatus at present employed in bandaging and dressing, both at home and abroad. He has given numerous illustrations, in the form of well-executed woodcuts, and has altogether produced what we conceive to be a very useful, and by no means an expensive, publication.

A Manual for Students who are preparing for Examination at Apothecaries' Hall. By John Steggall, M.D. Sixth Edition.

We are by no means favourable to the short cut to learning usually presented by a *vade mecum;* but we must confess that Dr. Steggall's book constitutes an exception to the general censure. We have here much that is useful in a very small compass, very methodically arranged, and clearly explained. We do not advise young gentlemen to trust to this, or any other "manual," for their full acquaintance with the subjects to which it relates, but are satisfied, nevertheless, that they will find in it both a useful index to what they ought to know, and "a brief chronicle" of the points they are most likely to be examined upon when they present themselves before the Court of the Worshipful Society.

Hahnemannism.—*A Popular View of Homœopathy.* By the Rev. Thomas Everest, Rector of Wickwar, Gloucestershire.

The following cool anathema met our eye as we opened this "popular" pamphlet just published by our *reverend* advocate of homœopathy. We give the passage for the amusement of our readers—for amuse them it must, unless their nerves be peculiarly sensitive.

"*Woe thrice-doubled to him* who is wise in his own eyes, who knowing that a perfect and complete system (viz., of course, homœopathy) claims attention on account of the multitude of its cures, &c. &c. *dares to quoit it down stairs like a shove-groat shilling*, &c. *Be a far lower, deep, and a far darker shade of infamy, the portion of that merchant of miseries* who would delay inquiry, because, if it proved true, he might fall short of some of *those rascal counters with which agony fees his unwholesome palm. Cleave the leprosy of Gehazi for ever to him* who would sell the mighty space of his large honours(?) for as much trash as may be grasped thus. But there is no such man; kind heaven forbid it! lest *the curse of Cain* onee more *affright the world!*"

We make no comment on this *spirited* extract, but would merely ask whether the Rev. Mr. E. might not better reserve his zeal for some other cause. The "Ercles," or Boanerges vein, we can assure him, is not the fittest for preaching Hahnemannism in England: and the method of arguing by *commination*, we would remind him, has been for some time out of fashion in this country.

For the favour he has done us in printing at length our remarks on a former epistle of his, he has our best thanks: we are only sorry we have made so little impression on him.

MEDICAL GAZETTE.

Saturday, Nov. 15, 1834.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

MEDICAL PROVISION FOR THE POORER CLASSES IN THE METROPOLIS.

THE accident to which we alluded last week—the loss of life for want of timely aid from a parish surgeon—is fresh still in our memory. We fear it is but one of many cases which are constantly occurring in this great metropolis; but of which little notice is taken, from their very frequency. It can scarcely be otherwise in a population so vast, the pauper proportion of which is so considerable, and where the supply of regularly-appointed practitioners allotted to the duty of attending on the poorer classes is so utterly insufficient. Take, for example, the great parish of St. Pancras, where the population exceeds 110,000, and where the workhouse alone usually contains above 1000 inmates: what is the extent of medical provision for the poor, allowed by the parish authorities? For the Infirmary of the workhouse (which commonly contains about 200 patients) there is a resident general practitioner, and, we believe, one physician, who visits there occasionally. For the out-paupers scattered through this extensive parish, which reaches nearly to Highgate in one direction, and to St. Giles's in another, there are *three* surgeons. These gentlemen are, of course, liable to be called upon at any moment, and often obliged to attend at distances most unconscionably harassing; while the pittance they receive for their labours is niggardly in the extreme.

This system of administering relief, is also wretchedly bad in another respect. Before a pauper can be attended by a parish surgeon, there must be an "order" procured, to shew that the unfortunate patient is entitled to be treated medically at the parish expense; and when that requisite is complied with, the surgeon, most probably, is otherwise occupied. Thus it was with the case of last week: some hours were lost before a little liniment could be procured for the burnt sufferer, through the necessary "order," and several more elapsed before the surgeon could attend in person: when he did arrive, it was too late.

There are few who admire more than we do, that *laissez faire* principle—that dislike of interfering with the concerns of the people, unless where it is imperatively necessary—by which our government is characterized above that of all the other states of Europe: but we think that, in certain instances, the observance of the principle may be carried too far. Of late, indeed, there have been measures adopted which tend to throw the poorer and more helpless classes of society more on their own resources than ever, and that apparently without a due consideration of their ability to bear the change. Persons high in authority have denounced the system which has hitherto prevailed, of ministering to the corporal wants of the destitute, and have openly attacked the benevolent institutions of the country—even those supported by voluntary contributions—as hot-beds of penury and demoralization. This may be very philosophical in theory, but it is very absurd in practice. The Malthuses, and the utilitarians of every description, may generalize as much as they please, on the advantages that must accrue to the state from the abolition of hospitals and workhouses; but poverty and disease will not vanish at the bidding of the greatest sage among them. In their prodigious zeal for the regeneration of mankind, the *philosophes* of France, about the period of the first revolution, seriously entertained

the notion of destroying all hospitals, infirmaries, and asylums, in that country; but luckily they took a little time to think: a commission was appointed to consider whether it ought or ought not to be done, and the verdict of the enlightened jury—it really was an illustrious one, including, as it did, the names of Laplace, Daubenton, Lavoisier, Bailly, and Darcet—was, that hospitals could not well be dispensed with, but were proper objects for the attention of government.

In this country the government does nothing for hospitals — merely recognizing the existence of some of them: yet, so far as such institutions can alleviate the immediate distresses of the humbler classes, thanks to the benevolent spirit that animates the higher orders in the community, nothing is wanting. It is therefore, perhaps, so much the better that there is no interference on the part of the state. The generous principles of the more fortunate members of society are thus directly enlisted, and actively engaged in behalf of their poorer brethren; and a sort of family feeling prevails among us—the foundation, no doubt, of much of our nationality—to which nothing comparable is readily found among our continental contemporaries. Would that an equally anxious desire were entertained by the poorer portion of the population, to be enabled to *aid themselves* by a provident regard for the future! In the absence or the withdrawal of aid from without, the existence of such a principle were better than treasures.

The self-supporting dispensary system is that which, above all others, seems calculated to meet the emergency, and to suit the circumstances of the times. It is reducible to practice even among the humblest: it has been tried in different provincial towns, and found to have the most promising, the most satisfactory results. Nor are the direct benefits arising from it to those who have embraced it, more conspicuous than the advantages which it confers upon the profession, and the invaluable boon it bestows on the country at large in the shape of sober, steady, and provident citizens. But we have so often and so fully expressed our approbation of the system, that any thing we should now add regarding its general merits must have an appearance of superfluity: it were, at the least, a tale twice told.

Entertaining such sentiments as we do of the value of the "self-supporting" principle, and particularly with reference to the actual wants of the community, we cannot but wish that the system had a fair trial in the metropolis. We are not ignorant of the fact that it has been attempted to be established in one or two districts of the town; but a *fair* trial it has not yet had. The numerous dispensaries and benevolent societies about London, and the medical services therein so liberally tendered, are, we know, a main impediment to setting up the Smithian system on a proper footing. The motives for its adoption here do not press with any thing like the force which attends them in places less abundantly stocked with charitable institutions, and a *corps medicale* full to overflowing. But all this constitutes only a difficulty, not an impossibility, in the way of erecting dispensaries on the excellent principle in question,—a difficulty which will be ultimately surmounted by a steady adherence to the grand object in view, with a fixed resolution to attain it. No *compromise* in the matter can be productive of any good: and we suspect it has been owing to a mistake of this kind that some reasonable progress has not already been made in establishing the system in the metropolis.

We understand that certain very questionable modifications of Mr. Smith's plan have of late been adopted in London. *Ticket-selling*, for example,

has its partisans among those who perhaps mean well, but are imperfectly acquainted with the only correct principles on which the self-supporting dispensaries can repose. This plan of selling tickets *to persons in sickness* is one of great facility of application, but at the same time fraught with gross abuses. It is a plan which can lay no claim to the merit of fostering that provident feeling in the poor which is so desirable on every account: nor can we see in it the least protection for the interests of the profession at large. It opens the door to abuses on the part of certain medical men, who, having little or no practice, find ticket-selling a convenient mode, however degrading it may be, of obtaining some: and such persons, as may be supposed, will not be very scrupulous as to the parties to whom the tickets are sold,—most probably to persons quite able to remunerate their medical attendants in the ordinary way, but who are induced to purchase tickets through a spirit of niggard economy. The plan, in fact, thus modified, resolves itself into one for selling cheap physic, to the injury of the profession, and the ruin of the system on which it professes to be founded.

Members of a self-supporting dispensary should only be admitted *while in health;* and their fitness for admission should even then be inquired into by a competent committee, who would exercise impartial justice between the candidate and the medical man. Institutions of the self-supporting description, it should be recollected, are designed to supersede charity, and to cultivate a provident feeling in the poor, by enabling them, when in health, by small periodical payments, to insure the privilege of attendance in sickness: but at the same time, it should be borne in mind that they are intended for the benefit of *the poor only*, and should be strictly confined to their use by proper arrangements, scarcely admitting of any infringement; otherwise the interests of the profession at large must assuredly suffer.

The true principle of the self-supporting dispensary system has not yet been fully developed: the advantages which will arise from it, if it be duly acted upon, are, we think, as yet but imperfectly understood: and perhaps the difficulties which are supposed to obstruct its more general adoption are overrated. But in every point of view we consider it as a subject well worthy of the attentive consideration of practitioners; and we cannot lay aside our pen without once more recommending it to their most earnest attention.

CONTROVERSY AT ST. GEORGE'S HOSPITAL.

HAVING given insertion last week to the letter signed by three of the physicians and the like number of surgeons of St. George's Hospital, and also to that of Sir Benjamin Brodie, we cannot of course hesitate in admitting the answers of Dr. Wilson and Mr. Walker. We should have limited ourselves to the insertion of their letters, had not the former imputed blame to us for inserting the circular of the physicians and surgeons above mentioned, as well as for expressing the opinion we did upon the subject. The question stands thus:—Dr. Wilson writes as though the physicians and surgeons were the aggressors, and holds that the allegation which they declared to be untrue, had never been made. In approving of the letter, we thought that it had been called forth by an attack upon their colleague and themselves: and on again referring to the newspaper, we still maintain that such was the case; nor are we the only editors who have taken this view *. But that our readers may judge for themselves, we subjoin the paragraph alluded to; and we beg it may be observed, that the types, as to italics, capitals, &c., are copied from the *Morning Chronicle*, without any alteration.

* "During the active canvass, an anonymous notice appears in the Chronicle, reflecting discredit on Mr. Brodie *and his colleagues.*"—*Renshaw's Medical and Surgical Journal*, Nov. 15, p. 506.

Quotation from the attack on Sir B. Brodie in the Morning Chronicle.

"Without making any invidious reflections, we would simply ask whether or not Sir B. Brodie has not been the principal agent and most active canvasser, not only among his brother medical officers, but among the proprietary where he has such personal influence, in persuading them to appoint an *additional* and (if Mr. Walker, whose active and valuable services are acknowled on all sides, is to be believed) *uncalled for* assistant? and whether or not—and we call upon the governors 'to read, mark, learn, and inwardly digest'—his OWN PRIVATE ASSISTANT (WHOM, in order to avoid the appearance of a JOB, he took special care *not to nominate* HIMSELF), be not one of the candidates? and whose success will be rendered certain, unless the governors shall in this 'eleventh hour' judge for themselves and select Mr. Lane, who has filled all the subordinate situations of dresser, house-surgeon, &c., and who has, from his talents, attention, and consideration to the poor objects under his care, fully entitled himself to be the selected FAVORITE."

Now the above passage (the whole of which is actually one continuous and uninterrupted sentence), is evidently the production of some illiterate person; besides which, we regard Dr. Wilson as too much a man of honour to descend to anonymous slander: for both which reasons we assume that he, like us, can only judge of the writer's meaning by his words.

We submit, that in the above passage the public is given to understand — first, that the appointment of a second assistant-surgeon being "uncalled for," was a JOB of Sir Benjamin Brodie's to serve "his OWN PRIVATE ASSISTANT;" secondly, that he used his "personal influence" with "his brother medical officers," in "persuading them" to consent to the appointment, notwithstanding that — thirdly, another candidate, Mr. Lane (from certain qualifications which are pointed out), had "fully entitled himself to be the selected FAVORITE." Either this is the meaning of the passage, or we profess not to know what the meaning may be. Now even had there been no allusion to the other medical officers, we think that it would nevertheless have been cowardly and contemptible on their part, not to have stepped forward to support their colleague against so wanton an aggression; besides which, we are still of opinion, notwithstanding Dr. Wilson's letter, that the imputation of being subservient to Sir Benjamin Brodie in the perpetration of a job, and promoting the election of his private assistant because he *was* his private assistant, to the exclusion of a better man, was attributing to them "dishonourable motives," and rendered it imperative on them to declare publicly that the imputation was "absolutely untrue."

Dr. Wilson informs us that we are "very partially acquainted with the opinions and feelings of the profession on the subject." We believe Dr. Wilson to be mistaken in this respect, and that disapprobation not less "warm and honest" than that which he has expressed for the letter of his colleagues, has been excited most keenly and generally by the calumnious slander on Sir Benjamin Brodie which called it forth.

We have touched only on the points in which we are ourselves editorially involved, in consequence of Dr. Wilson's observations;—as to the special pleading on other matters contained in his letter, it is for his opponents to deal with it—if they think it worth their while.

We have also to acknowledge the receipt of a note from Mr. Walker, by which we are relieved from much embarassment. He published a letter in the *Morning Chronicle*, on Friday, the 7th, which was intended as an answer to that of Sir Benjamin Brodie, and which, therefore, it appeared to us that we ought to give in this journal, as we had done the former. But, on the other hand, it contained several things which we feared it might be deemed illnatured towards the writer to place on permanent record — particularly the avowal contained in the second sentence. The manner, however, in which Mr. Walker appeals to our candour and fairness in the note which accompanies his letter, deprives us of any choice.

P.S.—As this was passing through the press, we received Renshaw's Medical and Surgical Journal. The extract which we subjoin will perhaps tend to convince Dr. Wilson that the current of feeling does not *all* run in the direction he would wish, and that we are not quite so "partially" informed as he sup-

poses: — "We think, and we have watched the proceedings at St. George's attentively, that Mr. Brodie has acted with much judgment, and has reflected honour on himself. The motives of Mr. Walker's objection are obvious to every one;—monopoly is an inherent feeling not absent from the breasts of many individuals."

DR. WILSON'S LETTER.

To the Editor of the Medical Gazette.

SIR,

IN a letter addressed by certain Physicians and Surgeons of St. George's Hospital to the Governors of that institution, under the date of November 5, and published by you in the Medical Gazette of this day, there are many confusions of statement and inference, involving me in my character of Physician to the hospital, and which I therefore feel myself called on at once to correct. The letter to which my remarks are directed is in its nature ephemeral,—written and circulated avowedly for an electioneering purpose of the twenty-four hours next ensuing on its publication; and believe me, sir, that I should have left it to the opinion passed upon it in those twenty-four hours, had you not thought fit to keep it before the public for a week beyond the natural term of its existence. Perhaps, sir, I may be thought somewhat over anxious for fame, in directing the attention of your readers to the omission of my own name in the list of physicians to the hospital who have affixed their signatures to this document; but still I think it right thus publicly to inform them, that until I saw the letter in print, I had not the least idea of any such unusual proceeding having been contemplated by my colleagues in charge of the medical business of the hospital. The letter, be it then remembered, sir, was never submitted to me, one of the physicians of the hospital, for approval; it was printed, published, and circulated without my knowledge, and was first put into my hands by a pupil of my anatomical school, grieved and indignant at what, in his warm and honest feeling, he considered to be an unjustifiable attempt to depreciate the professional claims and character of his teacher, Mr. Lane, on the eve of the morrow's ballot. I may here remark, that I have not been even honoured by the presentation-copy of this published letter, which in courtesy should have been transmitted to me as a physician and life-governor of the charity, whose interests, we are advised, would be best served by the election of the candidate therein recommended.

That I should have subscribed to many of the opinions expressed in this letter, my friends must know to be impossible. I am glad to observe that my colleagues have done me equal justice. Utterly deprecating the principle of combined interference on the part of the medical officers, between the Governors of the hospital and the candidates for their favour,—a principle rendered more obtrusively improper by the time and circumstances under which the letter implying it was written—by the date, and by the place of its publication,—I shall offer no further comment upon its three first paragraphs; they relate to the particular views, considerations, and motives, of particular surgeons and physicians, of which I have no knowledge, and with which I have no right to interfere. I will merely express my honest belief, that in the discussions preceding the appointment of a second assistant surgeon, and in the progress of the canvass for such appointment, there have been about as many unfounded reports, and about as much misrepresentation, on one side as on the other, and that to both a large share of such discredit belongs.

But in the fourth paragraph of the letter your readers will observe, sir, that "the undersigned physicians and surgeons of the hospital" become at once "the physicians and surgeons of the hospital" *generally*,—not, however, be it understood, by my adhesion to their proceedings; and thus I am obliged to protest against being considered in any way responsible for the opinions which follow. I beg therefore unequivocally to declare, that in my humble opinion, no appointment or right of patronage whatever should be suffered to exist in the establishment of the hospital by its Governors, that can in any way be avoided consistently with the efficient discharge of the medical and other duties of the institution.

It is almost needless to assert, in opposition to what is advanced in the letter of the six physicians and surgeons, that very great personal advantage might occasionally accrue to them, by increasing the number of the officers—an advantage not less than that of securing, under an auspicious election, for a relation or friend, the reversionary share of emoluments, amounting to not less than about two thousand two hundred pounds, annually raised in fees from the pupils in attendance on the medical and surgical practice of the hospital, exclusively of other large sums produced by the several lectures delivered by the medical officers of the hospital.—Certainly, from the appointment of assistant-physicians or surgeons, who receive no part of the sums thus annually raised, there can be no possible disadvantage accruing to the full physicians and surgeons of the hospital. On this paragraph, to which in its complete form I beg the at-

tention of your readers, I will further remark, that the appointment of a second assistant-surgeon was not recommended by the physicians and surgeons of the hospital in their collective capacity, which, from the sentence as it stands, the Governors would necessarily be led to believe. The degree of support which this measure received from the physicians of the hospital individually, will be best remembered by those who took part in the oftentimes repeated conversations and discussions on this subject in the board-room of the hospital, five months back. Answering only for myself I can assert, that I was then, as I am now, strongly opposed to the principle of this appointment, and to the way in which it was brought forward, believing it to be unnecessary, and therefore holding it to be improper.

In proceeding with the further examination of the averments made in the letter of the six physicians and surgeons, you, and your readers, sir, will not be a little surprised to find, in collating this part of the letter with an article in the Morning Chronicle of the 4th instant, which it professes to answer, that no such allegations as stated in the letter are actually put forth in that journal. On a moderately attentive perusal of the objectionable article in the Chronicle, it will be seen that dishonourable motives are not attributed to the physicians and surgeons of the hospital in their selection of a candidate, and that Sir B. Brodie is not represented to have used undue influence of any kind to induce them to vote for his private assistant; that no imputation attaches to the medical officers which does not attach to what the writer of the paragraph terms "the proprietary;" that "the absolutely untrue allegation" assumed by the six physicians and surgeons in their letter, is more insignificant than even falsehood itself,—that, in truth, it does not exist: to be brief, sir, it is an allegation that was never alleged; and yet, on this "absolute" nothing, an opportunity is constructed for advocating the cause of one candidate, to the prejudice of another. An excuse for this strange oversight on the part of the six combined authors must be found in the haste necessary for the composition, publication, and circulation of the *two* editions of their letter, in the interval of time between Wednesday November 5, and Thursday November 6, on the afternoon of which day it met the country Governors, on their arrival in town for the Friday's ballot. The extent to which correction of the press "has been had recourse" in one edition of the letter, is satisfactory evidence of the extent to which carelessless "had been carried" in the other.

To Mr. Lane's judgment, to his spirit, and self-respect, I leave the task of replying to the statements respecting his intentions of profit, his calculations of actual profit and loss, in the construction of his anatomical theatre, as an affair of sale and barter. Ample justice has already been done to this part of the letter, by many of the Governors assembled in the board-room on Friday last, in their criticisms of this particular paragraph, inserted, you will observe, between vague charges of slander, and, apropos, of nothing.

I may perhaps here be allowed, as a physician of the hospital, to express my most grateful thanks to Mr. Lane, for having supplied to our hospital school what it most needed, and what no one else could be found to provide for it—a well-constructed anatomical theatre, with dissecting rooms immediately adjoining the walls of the hospital. It is absurd to maintain that any claim preferred to the notice of the Governors by Mr. Lane, or his successors in this school, could supersede their patronage in the appointment of their medical officers, or deprive them of the absolute power to be exercised by their individual votes in the ballot for such appointment. It is well known to each of the six physicians and surgeons who signed the address to the Governors, that a right of control over Mr. Lane's anatomical school has been more than once offered to them, and that, had they been willing to exercise such right, they might long ago have done so.

And now, sir, in reference to the editorial remarks with which you introduce what you are pleased to entitle, "the letter of the physicians and surgeons of the hospital," it is with sincere concern that I am compelled to tell you, that the publication of such letter in your journal will have an effect very different from that of rendering all further allusion to the subject of it unnecessary. Be assured, too, sir, that in the excitement of this canvass, and in the circumstances which led to it, much, very much, has occurred, in addition to the publications to which you allude, which will bring disgust to all honourable and candid minds. And should you really suppose, sir, that irreparable injury is inflicted by these ill-judged publications, on the parties whom, as you assert, they are intended to serve, I will venture in truth and in courtesy to assure you, that you are very partially acquainted with the opinion and feelings of the profession on the subject of this election; and that you greatly overrate the power of the daily and weekly press in these matters; and that you are, moreover, but little acquainted with the firmness of our common English nature. The honest unobtrusive industry of years, the gathered love and respect of friends and pupils—the grateful recollection of

their quick but ready zeal in the struggle just past—will not be at once cancelled by the communication of an anonymous correspondent in a newspaper, of an over-busy friend it might be—it might be of an over-cunning enemy; or even, sir, (and in all good humour be it spoken,) by the leading article of a weekly medical journal.—I am, sir,

Your obedient servant,

JAMES ARTHUR WILSON.

One of the Physician's to St. George's Hospital.

London, Nov. 8, 1834.

To the Governors of St. George's Hospital.

MY LORDS AND GENTLEMEN—In the papers of this day, I have seen a letter from Sir Benjamin Brodie, in answer to some observations which appeared in the *Chronicle* of the 4th instant; and it is quite manifest that the insinuations thrown out by him are intended for no other person than myself. I must, therefore, distinctly deny being the author of that paragraph, though I have no hesitation in stating that I have unreservedly related all the facts connected with the recent proceedings at the hospital to every individual I met with, earnestly hoping that the particulars would find their way into the press, and would lead to the explanation which would now necessarily take place.

This, my Lords and Gentlemen, is what I have earnestly wished for, since a candid hearing has been denied me at the proper tribunal.

Sir Benjamin's statement with respect to the varying number of assistant-surgeons at different periods may, at first sight, appear to carry weight with it; but I trust I shall be able to show that his reasoning is utterly fallacious. At the period to which Sir B. refers, there were no assistant-surgeons to the hospital; individual surgeons who had been many years attached to the institution, it is true, applied for particular persons to be appointed assistants to themselves, and the Governors, not wishing to compel these surgeons to resign, granted the application: thus Mr. Keate was appointed assistant to his uncle; Mr. Brodie to Everard Home; and Mr. Ewbank to Mr. Griffiths; but these gentlemen were never assistant-surgeons to the hospital, though they were unanimously elected surgeons, in rotation, as vacancies occurred in that department. But during the very time that Mr. Brodie was assistant to Sir E. Home, Mr. Gunning being called upon to attend the army as surgeon general in the Peninsula, the patients of Mr. G. were likewise entrusted to Mr. Brodie's care, who attended them with all the zeal and punctuality which the importance of the charge demanded: thus having under his own care the in and out patients of two surgeons, just half the number admitted on the surgical part of the establishment. This will, I think, show that now an assistant-surgeon is regularly appointed to the hospital, who takes constant charge of the out-patients of the two senior surgeons, and is always ready and anxious to lighten their labours amongst the in-patients, that there can be little real demand for the appointment of a second assistant; for even if the maximum number of beds alluded to by Sir B. be immediately filled, the average division of the surgical patients will not, most assuredly, increase the labour for each surgeon so much as to require an additional assistant.

I will not now dwell on the former custom of appointing private assistants: it is well known to many Governors, and was found so highly objectionable on many accounts, that it was deemed advisable to add one assistant to the regular hospital staff. I am grieved to see a gentleman, holding the elevated position in society which Sir Benjamin does, coming forward to give currency to an assertion which he must, if he has an honest memory, know to be incorrect. I did not object to the appointment, upon grounds which he states, a monopoly only; and it must be manifest to the Governors that such a request coming from the surgeons, and that without my being made acquainted with their intentions, becomes at once a question of character; and the apparent natural inference which strangers would draw, would be the inefficient performance of the duties by the present assistant. In fact, Sir B. did insinuate something of this kind, but I challenged inquiry, and these insinuations were withdrawn, and a most satisfactory Resolution as to my conduct carried unanimously at the Board, on the 1st of July, and entered on the minutes of the Hospital. I feel called upon to give this hasty but immediate reply, as the letter from Sir B., while most unjust and unfair towards myself, is calculated to be of serious injury to my friend Mr. Lane, whose high qualifications as to moral worth and professional character are before the Governors, and I have confident hope that they will give him their utmost support.

I have the honour to be,

My Lords and Gentlemen,

Your most obedient humble servant,

R. B. WALKER,

Assistant-Surgeon to St. George's Hospital.

27, Curzon-Street, Mayfair.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY;

LATE

MEDICO-CHIRURGICAL SOCIETY.

Tuesday, Nov. 11, 1834.

The New Charter.

THE Fellows of this society held their first meeting for the present session, on Tuesday evening last, at the house of the President. The meeting was numerously attended; none of the ordinary business of the society was transacted, the time of the Fellows having been exclusively occupied in discussing questions arising out of the grant of a charter of incorporation, just received from the Home-office. After taking the chair, the President proceeded to read the charter, which ran in pretty nearly the terms usual, so far as we know, in such cases—viz. His Majesty declares himself patron of the society, willing, that the members shall be entitled "*Fellows;*" the incorporation be styled "*The Royal Medical and Chirurgical Society of London;*" the incorporation be qualified to plead and be impleaded; be entitled to hold property to a certain amount; consist of a council and fellowship, &c. &c. It contains, also, several other provisions, which appeared to us to be borrowed from the old statutes, of which, in fact, the instrument seemed in the main a summary or abridgment, leaving, however, abundant discretionary power, as to details or *by-law* (the charter term) legislation, in the hands of the society. The only names mentioned in the instrument are those of the President (Dr. Elliotson), Sir Astley P. Cooper, and Dr. Yelloly—the two latter distinguished gentlemen being the survivors of the original petitioners, in conjunction with the late Dr. Marcet. After the charter was read, many gentlemen offered suggestions; but in consideration of the novelty of the society's position, and the importance of the first proceedings in a legal point of view, it was resolved at length that a general meeting should be held that day fortnight for finally determining what should be done, and that meanwhile the charter should be printed and put in circulation among the Fellows; and the meeting adjourned, without having taken any final step, except voting an humble address of thanks to the King for his graeious patronage and royal charter.

The meetings, we understand, are to be held at the house of the President, until the society's apartments in Berners-street are quite ready for occupation. We are informed, that should time permit, there will be read on the next occasion, viz. the fourth Tuesday of the month, a paper by Dr. Wilson Philip.

GLASGOW EYE INFIRMARY.

CASE I.—*Crystallino-Capsulitis.*

ROBERT DUNN, a seaman, aged 38, admitted by Dr. Mac Kenzie, 18th Sept. 1834.

The left pupil is somewhat less than the right, of an egg-shape, and moves little on exposure to different degrees of light. When the eye is viewed through a magnifying glass of an inch focus, an infinite congeries of red vessels is seen within the verge of the pupil, on the lower outer part of the anterior hemisphere of the crystalline capsule. He says the vision of the left eye has been dim for seven years; at which time he was affected with severe pain in the eye and head. About three weeks ago he had another attaek of redness and pain of that eye, since when he has been affected with a feeling of stiffness in moving it from side to side, and an additional dimness of sight. He attributes the last attack to cold.

Venesectio.—Belladonna ad palpebras sinistras.

℞ Submur. Hydr. gr. vj. Opii, gr. j. M. ft. pulvis, h. s. sumendus. Cras mane capiat Sulph. Magn. ℥j.

19th.—Blood not buffy; feels his eye less stiff; pupil very little dilated.

Capiat Pil. ex Submur. Hydr. gr. ij. et Opii, gr. ss. ter in die.

21st.—Complains of circum-orbital pain.

Cucurbitula cruenta ad tempus sinistrum.

22d.—No pain since the cupping. Red vessels in capsule do not appear so much aggravated. Vision clear.

25th.—Pupil considerably dilated; some slight adhesion of the outer lower edge of the pupil to the crystalline capsules; vision much improved; red vessels in capsule much shrunk.

27th.—Mouth pretty sore.

Omittantur pilulæ.

CASE II.—*Crystallino-Capsulitis.*

John M'Kenzie, a worker in a foundry, aged 16, admitted by Dr. Mac Kenzie, 18th October, 1834.

Right eye pretty natural, and its vision good. Thinks he never saw perfectly with his left eye, but at no time has it been affected with any considerable pain. Has often had *fires* on his eyes, and there is a

small particle of cast-iron imbedded beneath the conjunctiva on temporal side of right eye, which gives him no uneasiness. The left pupil is less than the right, and the left iris a little different in colour from the right, and somewhat dull in its appearance. The left pupil is irregular in shape, but its motions are lively and extensive. On concentrating the light with a large lens upon the left eye, the anterior hemisphere of the crystalline capsule seems slightly opaque; but on looking at it through a lens of short focus, it is seen to be covered with innumerable red vessels, which are spread pretty equally over the whole of it. At the upper-outer edge of the pupil there is a small swelling of the iris. The pigmentum nigrum within the verge of the right pupil, presents its natural appearance and deep-brown colour, when viewed through the lens; but round the verge of the left, it is not so distinctly seen. Vision of left eye is so dim that he does not see the letters on the Infirmary card, while with the right eye he reads it easily. Tongue foul; pulse 72.

Venesectio.—Capiat Pil. Submur. Hydr. gr. ij. et Opii, gr. ¼, ter in die. Belladonna ad palpebras sinistras.

19th.—Blood not buffy. Pupil scarcely dilated.

Vesicatorium pone aurem sinistram.

22d.—Thinks vision of left eye somewhat clearer.

Capiat Olei Ricini, ℥j. Instillatur in oculum sinistrum gtt. solutionis aquosæ Belladonnæ.

27th.—Mouth sore.

Omittantur pilulæ.

29th.—Left pupil somewhat dilated, the aqueous solution of belladonna having been applied once a-day. Red vessels in capsule are evidently somewhat shrunk, and are more scattered than at his admission. Vision continues to improve.

Cases of crystallino-capsulitis are probably not unfrequent, but, as they present only very slight symptoms to the naked eye, are very apt to escape detection. This disease is, no doubt, the foundation of many capsulo-lenticular cataracts.

GUY'S HOSPITAL.

Operation for Strangulated Femoral Hernia.

An Irishwoman, æt. 66, was admitted into Esther Ward on Friday last, under the care of Mr. Key, with strangulated femoral hernia of the left side, which had existed five days. Considerable tenderness was present over the abdomen when slight pressure was made. There was great anxiety of countenance, and her features made her appear more aged than she really is. Her strength was considerable. All the usual symptoms of strangulated hernia were present.

Mr. Key determined upon operating immediately. The woman was brought into the theatre at eight o'clock P.M., when Mr. Key commenced by making an incision across the tumor parallel with Poupart's ligament; another incision at right angles with this, was carried directly upwards from its centre, thus forming the letter T inverted. The flaps were dissected back, and the true coverings exposed. The peculiar fæcal, or gangrenous odour, was now evident through these tunics. Mr. Key now divided the fascia propria (consisting of the cribriform fascia, the anterior portion of the femoral sheath, and the crural septum) upon the director. The sac thus exposed was then opened, and the intestine, which was merely a small knuckle, was found in a sphacelating condition.

The stricture existed at the usual place, namely at Poupart's ligament, and was readily relieved by dividing some few of its inferior fibres. The gangrenous portion of the intestine was then opened, and brought in apposition with the external wound, so as to form an artificial anus; the patient was then removed to bed, and brandy with laudanum ordered to be administered during the night.

At the conclusion of the operation, before the pupils left the theatre, Mr. Key made a few remarks relative to the operation. It is to be hoped that this example will be followed by the other surgeons, and that practical remarks be made at the time, and upon the spot; for it is undoubtedly the most effectual mode of conveying information.

On the following morning the patient's pulse was found still to be good, though her countenance was expressive of the greatest distress. The fæces had passed by the wound. She had dozed a little during the night. Four or six ounces of brandy, with a drachm of laudanum, had been given at intervals during the night and fore part of the morning. The brandy was ordered to be continued.

Sunday morning.—She has passed a better night, but still has tenderness over the abdomen. The pulse is tolerably good. Her fæces pass freely from the wound, but none pass per anum. Her powers are greater than could have been expected. Complains of sickness, which she says is checked by taking the brandy.

Monday morning.—Has little or no ten-

derness over the abdomen; was very restless during the night, having had very little sleep. Her pulse is still tolerably full, and of moderate power. Has hiccough, which is not constant, but is present for a short time, and then leaves her. The fascial coverings to the hernia, which were divided, have sloughed for a short distance around the wound, and were removed by Mr. Key with a pair of dressing forceps. The wound is looking healthy, and the fæces have a ready passage through it. The woman appears to be suffering simply from want of power. Mr. Key ordered her a table spoonful of brandy every hour. Porter, which she expresses a great wish for, is allowed *ad libitum*. Mr. Key has likewise prescribed—

Infus. Serpentariæ, ℥iss.; Tr. Card. C. ℥ij. to be given every sixth hour.

Tuesday morning.—Is in every respect much the same as yesterday.

The patient gradually sunk, and expired early on Thursday morning.

Fracture of the Ilium, with Dislocation and Rupture of the Ligaments of the Knee.

Several severe accidents have been admitted into this hospital during the last week. One case more particularly worthy of notice was brought in on Thursday evening, where the ilium was fractured below the anterior superior spinous process, with dislocation at the sacro iliac synchondrosis. The knee was likewise dislocated, all the ligaments having been ruptured except the ligamentum patellæ. The man, who is about 30 years of age, has great power, for the constitutional excitement which is induced is not near so considerable as might have been expected. Sir Astley Cooper has seen the case, and his prognosis is favourable. The leg is placed on a double inclined plane, with lateral splints to give support to the knee; the pelvis has a bandage passed around, to give it support.

The man possesses power to retain and expel his urine and fæces. It is rather singular that so serious an accident could have occurred without materially injuring either of the important organs contained within the pelvic cavity.

A Pupil.

ST. GEORGE'S HOSPITAL*.

Acute Hysteria, simulating Peritonitis.

Harriet Canning, æt. 17, admitted August 6th, under the care of Dr. Macleod.

Complains of very acute pain in the right iliac region, extending towards the umbilicus. The slightest touch, when her attention is directed to the part, excites the most exquisite pain; but if the attention be diverted, firmer pressure is borne with scarcely a consciousness of the contact. Pulse variable, but the prevailing character is that of frequency, with softness. Tongue whitish, moist; bowels regular; general appearance delicate.

The pain came on a week ago, and has continued unmitigated up to the present time. Catamenia appeared about the same period, after an absence of many weeks.

℞ Pil. Galban. Co. gr. v. fiat Pilula, ter die sumenda.

℞ Assafœtid. Gum. ʒss. Aquæ Tepidæ, ℥vj. M. fiat enema vesperc injiciendum.

8th.—The pain was so much relieved, that pressure could be borne yesterday under any circumstances, without complaint; to-day, however, there is some return of the pain, in the same spot as before. Bowels rather confined.

Pil. Aloes et Assafœtid. gr. v. ter die. Decoct. Aloes Co. ℥iss. cras mane. Empl. Belladon. c. Camphora *, parti abdominis dolenti.

14th.—Free from pain; bowels open; tongue clean.

Perstet.

16th.—Bowels very much purged; pain a little below the right mamma, increased by pressure, or deep inspiration; some return of the pain formerly complained of in abdomen; headache; tongue disposed to become furred; skin cool; pulse natural.

℞ Mist. Cretæ; Infus. Catechu, aa. ℥iij. Tr. Opii, ʒss. M.—sumantur Coch. Magn. ij. post singulas dejectiones liquidas.

[Diarrhœa was at this time very prevalent in the hospital.]

17th.—Purging stopped.

℞ Træ. Valerian. Ammon. ʒj. Aquæ Menth. Pip. ʒxi. M. ft. haust. t. d. s. Omittantur alia.

19th.—Quite well.

She was discharged in a few days afterwards, freefrom complaint.

Remarks.—The striking features of this case were the aggravation of the pain on pressure, to an extent bearing no proportion to the force employed, and the im-

* The cases in the No. for Nov. 1st, page 173, were treated by Dr. Seymour.

* The plaster used by Dr. Macleod, under the above designation, is composed of equal parts of extract of belladonna, emplast. saponis, and camphor: care being taken that the heat of the spatula be not so great as to dissipate this last ingredient.

mediate reduction of this exalted sensibility to the natural standard, or at least the temporary cessation of the symptom, by engaging the attention with something alien to the complaint. No symptoms more clearly distinguish between inflammatory and nervous disorders than these. In inflammation, the pain produced by pressure bears a relation to the force employed, nor does mental abstraction, unless very profound, enable the patient to endure external impressions without being instantly awakened to their presence. Yet it is astonishing how many cases of nervous disorder are brought to this hospital, wherein, prior to admission, an erroneous diagnosis having been made, a plan of treatment has been pursued calculated rather to perpetuate than remove the disorder. A girl complains of acute pain in the right hypochondrium, for example, aggravated by pressure or deep inspiration, and, forthwith, severe depleting measures are had recourse to, because this symptom happens to stand *in the list* of those indicative of inflammatory action. I have known it occur more than once, that, on being interrogated as to her complaint, a patient has replied, "I have got an inflammation of my liver; the medical gentleman who has attended me, told me so. I have been bled for it, and have had leeches applied, but am no better than before."

It is from directing the attention to one symptom alone—the most prominent it may be—that such errors arise; but if, on the contrary, we connect carefully all that present themselves—the negative as well as the positive—there will occur but few instances in which doubt can exist. The case above-related is one of frequent occurrence, and very fitted to illustrate my remarks. There was severe pain under the circumstances pointed out, but with this there was no hardness of the pulse, no coating of the tongue, no dryness of the skin, no thirst—no symptom, in short, indicative of the febrile excitement that marks the existence of inflammation; and though the report of the 16th would seem to indicate a relapse into a condition, worse even than that originally complained of, this arose, manifestly, from the debilitating effects of the accidental diarrhœa. The great majority of hysterical patients do not bear reducing measures: attention to the bowels, with the employment of the diffusible stimuli and the fœtid drugs, I have known, again and again, to remove quickly the most severe pain, though it may have lasted for weeks, and have defied the most active depleting treatment. The application of the belladonna and camphor plaster, in the case of Canning, brought relief after the lapse of a few hours only; and this likewise is an effect I have witnessed many times in the wards of St. George's Hospital.

The clinical books of the physicians abound in cases of hysterical disorder, for which the sufferers have applied for hospital relief, as a sort of last resource, and of which they have there been cured in the short space of a week or ten days.

Amenorrhœa speedily cured by Leeches to the Groins.

September 3d, Mary Moulton, æt. 16, admitted under the care of Dr. Macleod. Complains of pain a little beneath the right mamma, extending across the chest towards the left side; not increased by deep inspiration, and unattended with cough. Has frequent nausea, and vomited a small quantity of blood a few days ago. Bowels habitually costive; pulse 100; skin hot; catamenia absent four months.

Applicentur Hirud. xij. inguinibus.

℞ Pil. Aloes et Assafœtid. gr. x. omni nocte. Utatur Balneo Coxario, alterna quaque nocte.

5th.—Catamenia appeared, though rather scantily, immediately after the leeching. Pain in the chest relieved; bowels open; pulse and skin natural.

Repetantur Pilulæ.

13th.—Has occasional flying pains about the chest, but her general feelings are very much improved.

Pil. Galban. Co. gr. v. t. d. Decoct. Aloes. Comp. ℥iss. alt. auroris.

19th.—Discharged cured.

Remarks.—It does not often happen that the menstrual discharge is made to flow by the application of a few leeches to parts in the neighbourhood of the organ supplying that secretion: it is for the purpose of adding one to the scanty list of such successful cases that I am induced to record the foregoing example; but I am inclined to believe that the infrequency of the occurrence arises, in a great measure, from two circumstances—viz. an injudicious selection of the cases for which the remedy is adopted, and its ill-timed application. It would be absurd, of course, to have recourse to local depletion in a patient whose disorder was connected with a languid condition of the general circulation; but the case before us was one indicative of sufficient constitutional power, though restrained by some local derangement of function. The accustomed period had arrived, and symptoms existed which seemed to shew that nature was

making an effort to establish regularity of action in the peccant organ. There were a quick pulse, and a hot skin. The physician, therefore, perceiving the opportunity, supplied the little assistance that nature required, and at the very moment she needed it.

Perhaps the discharge of blood from the stomach may have been an attempt, on the part of the constitution, to effect vicarious menstruation: at all events, it is well know that vomiting of blood is more common during retention of the menses than at any other time.

A Pupil.

MIDDLESEX HOSPITAL.

CASE OF PERICARDITIS; WITH REMARKS.

To the Editor of the Medical Gazette.

Sir,

I am desirous of presenting to your readers a case of pericarditis, unusually interesting, now under treatment in this hospital.

I am, sir,
Your obedient servant,
G. C.*

Middlesex Hospital,
Oct. 29, 1834.

It is a painful circumstance to witness the servile attention and regard that medical pupils pay to such works as Thomas's Practice of Physic, and other elementary works in this department; but equally painful is it to see them guided by the opinions their authors adopt: one elementary work especially discourages young men from studying auscultation at all, and the author's pretext is readily seized as a good excuse for not devoting a few months' assiduity to a course of study which will ever prove of inestimable value to both practitioner and patient; at least it will save the former from a painful reflection, which he must one day suffer, that he has not used to the best advantage those instruments of acquiring knowledge which were within his reach during his pupillage at a large metropolitan hospital.

I am indueed to offer these remarks, from a conviction that the valuable pathological Essays on Diseases of the Heart, by Dr. Latham, published in vol. iii. of Medical Gazette, and Dr. Hope's admirable work, are not duly appreciated and read by the student in medicine. They present to us compositions of the highest character: the one for the discovery of an unerring guide in the diagnosis of acute inflammation of the pericardium, and the great practical lesson to be reaped from it; the other equally valuable for its explanation of the physical signs of the heart's action in health and disease.

In Dr. Latham's fifth essay it is stated, that the most useful accession to diagnosis that auscultation has afforded, exists in the establishment of the fact, that "a morbid sound with the heart's action invariably is present in acute inflammation of the pericardium." I may safely say, that in one hundred cases I have witnessed during the last four years, I have not seen cause to doubt the fact in any; and the truth of it has been pronounced sooner or later by the progressive alteration and subsequent distress in the functions of the heart and lungs, and by dissection.

A case similar to the subjoined was related by Dr. Watson, in his clinical lectures, published last year in the Medical Gazette. The present one is that of a servant, 22 years of age, admitted under Dr. Wilson, October 21, with rheumatism, of a fibrous form, ten days standing. The patient's countenance was profusely perspiring, and her features continually in a "broad grin." Excepting a sense of weight at the epigastrium, she presented no symptoms of internal inconvenience; the pulse was 110; respirations frequently sighing; and on applying the stethoscope over the region of the heart, there was distinctly heard a morbid sound accompanying, both systole and diastole; with the former it was harsh, grating, and close to the ear; with the latter it was a deep churning sound. The systolic rough sound was only heard over the space of a crown-piece, about an inch from the sternum; the diastolic "souffle" was detected in every part of the præcordial region. Previous cases had taught in too melancholy a language the importance of vigilant treatment being instantly adopted; she was accordingly bled to ℥xxxvi., but syncope could not be induced. Hirudines xx. applied to the præcordia, and the following pill every four hours:—

Pil. Hydrarg. gr. iv.; Hydr. Submur. gr. ij.; Opii. Pulv. ¼ gr.

The deep diastolic sound only could be heard after the venesection.

In the evening the two sounds returned as distinctly as before the venesection, but lessened in intensity.

Ung. Hyd. Fort. ℥j. cruribus infricandum nocte maneque. P. Pil.

Oct. 22d.—Was found to have passed a quiet undisturbed night; is perfectly collected, and not complaining of any pain

* The name has been sent to us.—Ed. Gaz.

internally; the rheumatie pains better. The sounds are now as loud as yesterday before the depletions, the pulse 100, and the sense of weight at the epigastrium gone.

Rep. V.S. ad ℥xviij.; adde Pilulis singulis Antim. Tart. ⅛ gr.

The sounds altered after the veneseetion as yesterday, but beeame faintly audible towards the evening.

23d.—She has passed another good night, and the features are assuming a more natural aspect. The systolie *bruit* audible in a slight degree; the "souffle" is very loud.

P. Pil. et Ung. Hyd.

24th.—No effeet has hitherto been produeed on the gums by the mereury. The first sound is now more allied to a earpenter's plane, and is as it were close to the skin.

28th.—She is now affeeted by the mereury, and there is purging. The rheumatism is well. She is free from pain, and makes no eomplaint. Is anxious to leave her bed, but that is not yet permitted. The sounds are strictly the same as on the 23d, but appear to get fainter daily, espeeially the systolie grating. Is this produeed by attrition of lymph exterior to the heart? or is it within the organ?

On the day that the above ease was admitted, a post-mortem examination was made of a ehild 10 years old, who had been eonfined to her bed sixteen months previously with aeute rheumatism, attended with violent delirium. As this latter symptom subsided, the child beeame greatly distressed in her breathing, and had palpitation of the heart, with some cough. For these she was admitted in the spring of 1833, under Dr. Watson, and quitted the hospital in Deeember last, very little benefitted. The heart's aetion during the whole period was attended by a loud "ehurning" noise.

She returned on the 21st of this month, and sought admission into the hospital. In the eourse of the day, as she was attempting to get from her bed to the ehair, she suddenly expired.

The heart was equal in size to that of a full-grown person. Some bands of adhesion were seen between the pericardium and heart, and mamillated points projected from the surfaees of the auricles.—Along the edges of the trieuspid and mitral valves were seen numerous seed-like deposits.

That portion of the internal lining of the left ventriele, before the aortie valves, was thick, and appeared like washed leather for the spaee of an ineh.

This morbid eondition of the membrane had so eontraeted and bound down the aortie valves to it, as to render them perfeetly useless. The mitral valve was as thick as a half-erown pieee. There was a large portion of the lung in a state of pulmonary apoplexy.

SURGICAL REPORTS

FROM THE

LONDON DISPENSARY.

By R. R. Robinson, Esq.

Surgeon to that Institution.

Case I.—*Extensive Malignant Ulceration of the left side of the Face — Enlargement and Induration of the Cervical Glands.*

William Elliot, æt. 50, admitted April 16th. About four years ago he perceived a small swelling under the lower palpebra of the left eye, like a wart, which inereased gradually in size. He went into an hospital, where remedies were used to destroy the surrounding skin: he left it two years ago, sinee which the disease has eonsiderably extended. The left side of the faee is now eompletely gone; in its room is an uleer, with healthy granulations, extending from the ear (which is ineluded) down to the symphysis of the inferior maxilla. The edges, however, are hard and pneker-ed; the inferior part of the left orbit is quite destroyed, as are also the left malar and superior maxillary bones, exeept two small portions whieh stand out from this immense exeavation in a state of neerosis, discharging a healthy-looking but offensive pus, tinged oeeasionally with blood. The left eye is redueed to a round tense ball, very tender to the touch; the cornea eompletely opaque. He experienees exerueiating pain in the wound, from which saliva is eonstantly dribbling. The mouth ean only be opened to a very small extent, and he has diffieulty in swallowing. About the middle of the neek, on the left side, there is a eluster of glands about as large again as a nut, exeeedingly hard, and firmly adherent to the skin above, and to the superficial faseia below. Mueh emaeiated; bowels open.

Pulv. Doveri, gr. x. n. et m. Cat. Panis.

July 9th. — Pain most exerueiating; eannot obtain rest even with opiates; the remaining portions of the malar and superior maxillary bones have exfoliated and come away entirely; the bones of the orbit are also more exposed and neerosed, but the granulations throughout the whole wound are very healthy; the ulceration

extends down the neck. Below the ear there is another indurated gland; those lower in the neck larger and still harder than they were.

Rep. Opium.

August 9th.—The ulceration extended deeper, and his pain continued excruciating, until released by death this day. A slight bleeding occurred now and then, but not to any amount. I had not an opportunity of examining the body.

Remarks.—This case affords a good illustration of the great ravages that may follow a simple pimple of the skin. I believe this disease commenced in the glandular substance of the cutis vera; that it spread by ulceration from one follicle to another, until a considerable extent of skin was implicated; the parts beneath then became affected, the eye was inflamed and destroyed, the bones also of the cheek became involved, and the irritation was propagated to the cervical glands, in consequence of which they became enlarged, adherent, and decidedly scirrhous. The progress of the disease was exceedingly slow, but the pain very severe. No benefit appears to have resulted from escharotics, which were applied at its commencement. The disfigurement of the face was frightful, and such as I never witnessed but in one other case, where both sides of the face were very considerably destroyed, and the mouth and nostrils laid into one large irregular cavity, by an ulceration of similar character. This man appeared to die exhausted by long-continued suffering, though it is not improbable that the ulceration might have extended towards the base of the brain, of which, however, there were no symptoms. I much regret I could not clear up this point by disseetion.

Case II.—*Malignant Ulceration of the Mouth —Hydrocephalus*

John Andrews, æt. 65, admitted December 28th. Perceived a small pimple on the inside of the right cheek some time ago, which ulcerated, spread slowly, and was attended with a shooting pain. The ulceration has now extended throughout the interior of this cheek, giving it a puckered, hardened, granular appearance; it is covered at parts by altered cuticle, and discharges an offensive saliva; the ulceration now extends towards the tonsil. For the last three months he has been unable to open his mouth above an inch. The submaxillary gland on this side was much indurated, but has in the last ten days softened; and now there is here an evident abscess, excessively tender to the touch, but which he will not allow to be opened. He can only swallow liquids; is much emaciated; nights generally restless; countenance leaden, almost livid; headache, dyspnœa, and cough, to which he is subject every winter; respiration at parts dull, rhonchus mucosus at others. Pulse regular; bowels open.

Cat. Panis. Ext. Conii, gr. viij.; Cal. gr. j. o. n.

Jan. 6th.—The abscess under the chin broke this morning, and discharged much healthy-looking pus; freer from cough; weaker.

11th.—More pain in the mouth; ulcer extends backwards; bleeds slightly at times; abscess still discharges, though less freely; cough gone.

18th. — Continued much in the same state, and died yesterday.

Dissection.—Dura mater firmly adherent to the arachnoid in the whole course of the longitudinal sinus. Arachnoid and pia mater preternaturally vascular, thickened, and gelatinous. A considerable quantity of serous fluid, tinged with blood, in the ventricles on the surface, and in the base of the skull, amounting altogether to ℥viij. Upper surface of the brain healthy; in the vicinity of the thalami (posteriorly) in a state of ramollissement; the base of the brain and nerves healthy. The ulcer occupied the whole of the right cheek, had destroyed the right palate bone, and part of the right ramus of the inferior maxilla. Towards the pharynx the mucous membrane was of a black colour, to the extent of a shilling, and rather hard. Pharynx itself, as also larynx, healthy.

Cartilages of the ribs ossified. Lungs slightly adherent to the chest; left in a state of engorgement, and easily lacerable; right also engorged. Coronary arteries ossified; mitral valves a little thick, not bony. Slight hypertrophy of the left ventricle; ossific spots in the aorta. Abdominal viscera healthy, with the exception of slight thickening about the pylorus.

Remarks.—The ulceration in this case appears to have been of the same character as in the preceding; it commenced, however, on the inside instead of the outside of the cheek,—in the salivary glands, perhaps,—instead of in the follicles of the cutis vera. As the right palate bone was destroyed by the disease, it is not improbable that the serous effusion within the cranium, the vascularity, thickening, and gelatinous appearance of the arachnoid and pia mater, resulted from propagated irritation, and were consequently secondary to the ulceration of the cheek. It is curious that effusion to the amount of *eight ounces* should have taken place within the cranium, and not have been manifested

during life by convulsions, coma, delirium, or any symptoms of cerebral disturbance; which I would explain either by supposing that the fluid was very slowly effused, as in chronic hydrocephalus, or that a great part of the serum exuded from the vessels *in articulo mortis*, or even *post mortem*. The state of the lung appears to have existed during life, and may be accounted for, perhaps, by the irritation evidently going on in the system, and by the congestion which must necessarily have arisen from the thickening of the mitral valves, and other disease of the heart.

ACCOUCHEURS AND NURSES—*POUNDAGE* SYSTEM.

To the Editor of the Medical Gazette.

Sir,

As your pages have ever been open for the exposure of real abuses in the profession, I take the liberty of handing you the following fact. Perhaps you may be as ignorant as I was a short time ago, of a practice pursued by some medical men in the city, which I hope, for the honour of the profession, is not very general—namely, the practice of paying over a portion of the fees received by them as medical attendants at an accouchment to the nurse, which portion receives the name of *poundage*. Now, sir, as it is not common for any one to give up what he is justly entitled to without some return, I fear such conduct will raise a suspicion that the individuals concerned are not the most immaculate. To say the least of it, such a proceeding is highly culpable, as it must injure the respectability of the profession. A farther explanation might be given, but I hope this hint may be sufficient for those pursuing this course, and for preventing others from following their example, as also to remind them, that if they do not respect themselves as they ought, they at least should not lessen the respectability of their brethren in the eyes of the public.

I am, sir,
Your obedient servant,
Edward Duncan.

3, Leadenhall-Street,
Nov. 11, 1834.

OPERATIONS AT GUY'S.

To the Editor of the Medical Gazette.

Sir,

I see in a preceding number of your journal some remarks made on the operating theatre at Guy's Hospital; but as the building of a new theatre would require some little time to accomplish, allow me to throw out a few hints respecting the present. And first, I would say that, generally speaking, there is sufficient room for the average number of students who usually attend, provided they had the full benefit of the places they take; this, however, is far from being the case; for instead of the operating and assistant surgeons and dressers for the week (who certainly are all required in any operation) being within the circle allotted to them, there are besides, visitors, demonstrators, dressers, and ex-dressers, crowding in around the patient; and they, together with those immediately behind, being obliged to reach over to obtain a sight, wholly exclude the benefit of the operation from those pupils who are less fortunately situated. It is but justice to Mr. Browell to say, he has once *spoken* of it, but he will only be *doing* justice to the pupils by enforcing it; although I trust the persons alluded to will absent themselves of their own accord, and thus give the student the advantage of the money paid for witnessing surgical operations, and at the same time prevent those inhuman cries of *heads, heads, dressers' heads*, which every now and then burst forth from every part of the theatre, whilst the patient is writhing beneath the torture of the scalpel. I wish to know my profession, and therefore require the advantages above alluded to.

A Guy's Pupil.

Nov. 10, 1834.

MEMOIR ON THE LYMPHATICS OF THE SKIN, OF THE SEROUS MEMBRANES, AND OF THE NERVOUS AND MUSCULAR TISSUE.

By V. Fohmann,
Professor at the University at Liege.

This author has placed himself in the first rank among the anatomists, by his work on the communication of the lymphatics with the veins, in 1821; his beautiful anatomy of the lymphatics of fishes, in 1825; his work on the lymphatics of the placenta, and umbilical cord, in 1832, and which forms the first part of the present series. M. Fohmann far outstrips his rival, Mascagni, not only in ascertaining the disposal of the lymphatic trunks, but in his search after the distribution of these vessels in the very tissue of organs; which, as Mascagni observes, is the most important point to be sought after.

The ultimate distribution of lymphatics is admitted to vary in each organ; the same observation is to be made on the blood-vessels. M. Fohmann shews that the lymphatics do not arise for the most part by free radicals, but by anastomosing plexuses, deprived of valves, and which are finer and nearer to each

other, the closer they are placed to the free surfaae of the tegumentary, serous, and mucous membranes. There cannot, then, be open orifices at the extremities of vessels; these organic orifiecs, if they did exist, could only be found in the coats of the vessels.

The first platc of the work represents the lymphatics of the integuments of the chest; the second, those of the scrotum, the skin of the penis, and glans; third, those of the mucous membranc of the œsophagus and stomach; fourth, the lymphatics of the mucous membranc of the ileum; fifth, those of the mucous membrane of the colon; sixth, lymphatics of the mucous membrane of the tongue, larynx, trachea, and bronchi; seventh, those of the urinary bladder and urethra; in the eighth are represented the lymphatics of the serous covering of the heart; in the ninth, those of the pleura covering the diaphragm, and those which form (*gaines*) meshes around the fibres of this muscle; in the tenth plate are represented the lymphatics of the arachnoid and pia mater: those plates are all very carefully engraved.

This work is additionally useful to anatomists, as it gives the manipulations of those materials by which M. Fohmann has been enabled to make his preparations; and we may be assured of the accuracy of the plates from this circumstance, that M. Lauth has succeeded, by following his directions, in injecting several parts which have afterwards exactly corresponded with the delineations of M. Fohmann.—*Dublin Journal.*

MUNIFICENT DONATION.

A Parisian lady, of distinguished personal and mental accomplishments, died lately, in consequence, it is said, of a shock which preyed on her health for the last two or three months. After bequeathing a number of legacies to various persons, she leaves an annual prize of 5000 fr. to the Academie de Médecine, to be given to the author of the best work on the prevention, alleviation, or cure, of bodily disorders, proceeding from mental anguish. Madame Recamier, who is the executress, had the announcement made to the Academy through M. Bourdois de Lamothe.—*Gazette des Hôpitaux.*

SYMMETRICAL DIVISION OF THE HEART.

M. Cruveilhier lately presented to the Anatomical Society of Paris a heart which he had been able to separate into two symmetrical and equal portions, in the manner which had been previously done with respect to some of the lower animals.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO RECEIVED CERTIFICATES ON THURSDAY, NOV. 13, 1834.

Thomas Middleton, Manchester.
William John Harris, Manchester.
Frederick Palmer, Great Yarmouth.
Frederick Yate, Madeley.
Thomas Moore Parke, Askrigg, Yorkshire.
Theodore Dennis, Winchester.
George Seymour Dixon, Wolsingham, Durham.
John Henry Simpson, Loughborough.
Edward Tweddle Atkinson, Richmond, Yorkshire.
William Abraham Cox, Somersetshire.

In the Press.—M. Louis's Work on Phthisis; translated from the French. With Introduction, Notes, and Additions, by Charles Cowan, M.D.E. M.D.P. &c.

WEEKLY ACCOUNT of BURIALS,

From Bills of Mortality, *Nov.* 11, 1834.

Age and Debility	48	Heart, diseased	1
Apoplexy	5	Hooping-Cough	8
Asthma	10	Inflammation	25
Childbirth	8	Bowels & Stomach	4
Cholera	2	Brain	3
Consumption	69	Lungs and Pleura	11
Convulsions	26	Insanity	2
Croup	1	Jaundice	1
Dentition or Teething	2	Liver, diseased	4
Dropsy	7	Measles	9
Dropsy on the Brain	11	Mortification	2
Dropsy on the Chest	3	Small-Pox	6
Epilepsy	1	Sore Throat and Quinsey	2
Erysipelas	1	Spasms	2
Fever	9		
Fever, Scarlet	17	Stillborn	15
Gout	2		
Hæmorrhage	1		

Decrease of Burials, as compared with the preceding week . . . 22

METEOROLOGICAL JOURNAL.

Kept at Edmonton. *Latitude* 51° 37′ 32″ *N. Longitude* 0° 3′ 51″ W. *of Greenwich.*

Nov. 1834.	Thermometer.	Barometer.
Thursday . 6	from 56 to 61	29·58 to 29·63
Friday . . 7	53 60	29·53 29·64
Saturday . 8	46 54	29·43 Stat.
Sunday . . 9	40 51	29·45 29·55
Monday . . 10	39 47	29·83 29·89
Tuesday . . 12	37 52	29·99 30·09
Wednesday 13	36 47	30·20 30·19

Wind variable, till the morning of the 9th; since, N.E.

The 6th and 7th cloudy, with frequent rain; the 8th cloudy, with intervals of sunshine; rain almost incessant during the 9th, and morning of the 10th; showers at times in the afternoon of the 11th; the 12th generally clear, except the afternoon.

Rain fallen, 1 inch, and ·375 of an inch.

Charles Henry Adams.

Errata.—In Mr. Jones's paper, p. 112, line 10 from the bottom, instead of "set in," *read* "supervened." In Mr. Fawdington's paper, p. 158, line 13, *for* "subsequently," *read* "prior;" and in the same page, line 23, *for* "more," *read* "mere."

W. Wilson, Printer, 57, Skinner-Street, London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, NOVEMBER 22, 1834.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture VIII.

DISEASES OF THE AERIAN PASSAGES.

PITUITOUS CATARRH.

We have occupied so much time in the description of the acute and chronic forms of mucous catarrh, that we shall have less occasion to dwell on the other species, as they all bear a great affinity to each other in their morbid anatomy, signs, and treatment.

You recollect, gentlemen, the difference between mucous and pituitous catarrhs. Mucous catarrh is an inflammation of the aerian mucous membrane, having for its result a secretion of a *yellow* matter; in pituitous catarrh the secretion is *transparent*, *colourless*, and *viscid*. Pituitous catarrh, like the mucous, is divided into acute and chronic varieties, and we shall commence with the acute form.

ACUTE PITUITOUS CATARRH.

Morbid Anatomy. — The aerian mucous membrane is moderately swollen, and frequently somewhat softened; it is rarely extensively reddened, but generally spotted irregularly. You will also find, that, in almost all severe cases, the air-cells of the lungs are more or less infiltrated with serum.

The membrane is in the first instance dry; soon, however, the same sort of acrid, thin, and colourless secretion takes place, as I described in the acute mucous form, and the fluid then becomes bland, viscid, without colour, and transparent; it has a certain degree of tenacity, so that it may be drawn out into long films. The expectorated matter, when collected in quantities, is spumous; and when its surface is removed, the fluid beneath appears like a mixture of white of egg and water. The quantity varies, but it is generally considerable.

Local Signs.—The respiratory murmur is less audible during the accesses of cough than in the intervals between, but it is rarely completely suspended, as in acute mucous catarrh—the sonorous wheezing, sibilation, and the mucous rattle, may all be heard upon an extent of the surface of the chest, proportionate to the bronchial tubes affected. The sibilation is often slight, and seems to be prolonged in the whole of the bronchi: Laennec denominates this the *sub-sibilant respiration*. The respiratory murmur is often louder than natural during the intervals of coughing, so as to be nearly puerile. If the bronchial tubes be dilated, it becomes bronchial; and as the disease is frequently accompanied by serous effusion into the air-cells, the crepitating rhonchus is then distinctly audible, particularly at the parts of the chest corresponding to the lower and posterior portions of the lungs.

Functional and general Signs.—This disease is not uncommon in a moderate form, but there is then always a troublesome cough, occurring in distinct paroxysms; the expectoration is copious, frequently from one to two pints in twenty-four hours; the dyspnœa and oppression are almost always more severe than in the previously described species. But when this catarrh is violent it soon threatens suffocation: it commences with the symptoms of a common cold, and in a very few hours the cough becomes excessive and the expectoration enormous; so that as much as three

or four pints have been thrown up in a very short time. The dyspnœa is then extreme, and the patient falls into a state of indescribable anxiety; congestions form, the face becomes livid, the cerebral functions confused, the pulse irregular, and the extremities cold. This affection occasionally attacks infants, and is easily mistaken for croup.

Causes.—The same as those of acute mucous catarrh, but as that species occurs most frequently in bilious temperaments, this happens by far most commonly in those of lymphatic constitutions.

Treatment.—The indications of treatment are the same as in acute mucous catarrh; the same indications and objections to bleeding occur also: emetics are of great use, especially in children, in consequence of the great quantity of viscid filmy secretion which obstructs the bronchial tubes, and which they generally swallow rather than eject by the mouth. Laennec used the tartar emetic in the same manner as I shall describe when we arrive at the treatment of peripneumonia, and with success: he recommends the belladonna and paregorics, to diminish the necessity for respiration. Blisters and mustard cataplasms may be used with great advantage.

CHRONIC PITUITOUS CATARRH.

I cannot do better, in speaking of this disease, than follow the admirable description given of it by Laennec.

Chronic pituitous catarrh, like the chronic mucous, is a frequent infirmity of old age, and especially in those of a lymphatic temperament, previously weakened by excesses, or by too sedentary a life: repeated attacks of acute mucous catarrh evidently predispose to this affection. It has been stated, too, that it is not uncommon in old gouty persons, in whom that disease has lost its regular form and some of its intensity.

Chronic pituitous catarrh is rarely a consequence of the acute species—it commonly follows a succession of attacks of the mucous, or dry. When the expectoration is well established, it becomes almost regularly intermittent; there being usually two attacks of cough and expectoration in twenty-four hours—the one on waking in the morning, the other in the evening, and in some immediately after a meal. The quantity is always considerable. Laennec has seen as much as three pints in each access, the duration of which was not above an hour or two, and it is extraordinary how long patients will continue to expectorate so large a quantity: he speaks of an individual, above seventy years of age, who, for ten or twelve years, had brought up every day, in two paroxysms, about four pints of pituitous fluid. I had a patient at the Lung Infirmary, a young Irishman, who for many months expectorated daily from five to six pints of transparent viscous matter: he ultimately fell a victim to the disease. I suspect that, in these cases, the lungs are always greatly œdematous, for I never meet with them without discovering co-existing crepitation; and in the case I have just mentioned, the whole pulmonary tissue was gorged with colourless serosity.

It is singular that this quantity of expectoration is not incompatible with a certain degree of health, although it continues for years. It is true that after a certain time the patient becomes paler and thinner, but he does not fall into a state of marasmus; he becomes more lymphatic, and the blood, if drawn, shews less consistance; but as old age advances, the accesses of cough are more prolonged and have shorter intervals—the dyspnœa is constant, and he is now called an asthmatic; in fact, it is another form of *humid asthma*: finally œdema of the lungs supervenes, and the catarrh becomes *suffocative*. It occasionally happens that the disease is quicker in its progress, and that the patient falls sooner into a state of great exhaustion and marasmus. It is fortunately uncommon to meet with chronic pituitous catarrh in its exquisite form, although, in a moderate degree, it is by no means infrequent.

Causes.—They are the same as those of chronic mucous catarrh, but, as I have observed before, the disease is most frequent in persons of lymphatic temperaments.

Treatment.—The same mode of treament should be adopted as we have described for chronic mucous catarrh.

WHOOPING COUGH.

We have now to consider a variety of pituitous catarrh, known under the name of *Pertussis* or *Whooping-cough*. I place it as a variety of this affection, because the secretion is of the same character; although there are essential differences, consisting in the spasmodic nature of the cough, in the spasm of the glottis, in its attacking children more particularly, in its contagious nature, and in its occurring but once during life.

Pertussis, or whooping cough, has received a variety of names: it has been called *tussis convulsiva*, *tussis ferina*, *chin-cough*, and *kin-cough*.

Morbid anatomy.—The condition of the mucous membrane has not been much observed, but there is no reason to suppose that it differs from its state in ordinary catarrhs; indeed, I have seen it swollen, and reddened in patches, and the bronchial tubes containing a considerable quantity of spumous secretion. When pertussis

terminates fatally, it is usually upon the supervention of peripneumonia or œdema pulmonum: in the first case, the lung will be found to contain sanguinolent serum, and here and there a lobule will be found hepatized; in the second, a large quantity of highly spumous and colourless serosity follows the scalpel upon the section of the pulmonary tissue.

Functional signs.—There is a peculiar cough in this disease, which, when once heard, can never be mistaken for any other: it occurs in paroxysms, and consists of a number of saccaded, sonorous, and precipitated expirations, lasting for some minutes, and leaving the patient hardly a moment to inspire; at last a deep inspiratory movement is effected, attended by a prolonged crowing noise, evidently depending upon a spasmodic contraction of the glottis: it is to this noise the term of whooping is applied; and you will observe, gentlemen, that it always occurs during inspiration. After the first whoop, another succession of similar expirations takes place, followed by another whoop; and the paroxysm will continue in this way for a considerable time, until the little sufferer stamps with impatience: his face swells and becomes livid, especially during the whooping; he grasps a chair or any other firm object for support, inclines his body forwards, and at last the fit terminates in a tolerably copious excretion of pituitous fluid, which hangs in films from his mouth: very often the access ends by vomiting. In almost all ordinary cases the patient will return immediately to his amusements, and be as playful and unconcerned as if nothing had troubled him. These paroxysms may occur many times during the day; they are generally observed to be most violent during the evening, and least so at night; and, as the disease proceeds to a favourable termination, the fits of coughing are usually confined to the morning and evening, then to the evening alone, and at last they totally disappear. Pertussis is most uncertain in its duration; for sometimes it runs its course in two or three weeks, sometimes in seven or eight months.

The dyspnœa is always considerable during the paroxysm of cough, and especially towards its termination, even to impending suffocation. In the intervals there is commonly no difficulty of breathing; and when dyspnœa occurs, you may almost be certain of the co-existence of peripneumonia or œdema of the lungs; in either case the danger is much increased. Two or three winters since, pertussis was extremely fatal in the eastern parts of London, and I then invariably found that its fatality arose from the above combinations.

Local signs.—In the intervals of coughing, the ordinary signs of catarrh present themselves; that is to say, the sound on percussion is good, and the respiratory murmur varies on different points of the chest; at one part it is lost; at another, slight; at a third, puerile; and these parts will alternate with each other in the variation; so that, where the sound is at one time inaudible, it will at another be puerile. The various kinds of wheezing are also heard in pertussis; and if peripneumonia, or œdema pulmonum, be superadded, crepitation becomes always distinct at the inferior lobes of the lungs.

During the paroxysm of cough, a singular phenomenon occurs which never could have been discovered positively, except by auscultation. It might be supposed that the lungs would inflate during the strong inspiratory effort of whooping; but not only is the rima glottidis spasmodically contracted, but it would appear that the bronchial tubes are in the same state, for, during the whooping inspiration, and indeed the whole paroxysm, not the slightest respiratory murmur is to be heard; it only appears when the access has totally ceased.

General signs.—Fever rarely occurs, except with peripneumonic combination. If the disease be much prolonged, and the patient be of a weakly constitution, great debility takes place, with hydropic effusions. In many cases the general health is but little affected.

Causes—Individual.—Pertussis by far most commonly occurs in children; I have, however, seen three or four instances of it in adults: it attacks but once during life.

External.—The common causes of catarrh certainly predispose to whooping-cough, perhaps occasionally produce it; but it most frequently arises from contagion, although Laennec expresses some doubts on that point.

Treatment.—I commence this part of my subject by stating, that there are few diseases more intractable than pertussis. It seems to be an affection that will run a certain course in despite of any means which may be used. Many indications have been pointed out, and many remedies proposed: these remedies, so vaunted, may have been of advantage in some cases, and then it has been inferred they would answer in all; and here let me observe, gentlemen, that we are too much in the habit of generalizing in medicine from isolated facts: the "*Post hoc, ergo propter hoc*" is unfortunately also too common a sophism in medical reasonings. You cannot by possibility be too careful in accumulating a series of facts;—you cannot be too cautious in observing their regularity, and their invariability of succession, so as to determine their relation of cause and effect; and if, by reiterated and scrupulous

examination, you are enabled to form a legitimate induction, so as to establish a general principle or quality pervading a whole class of phenomena, you will indeed have made a great advance in your profession.

So long as there is no dyspnœa or fever, I have but little apprehension of pertussis, but content myself by attending to the general health of the patient, and administering an occasional emetic, by which the viscid phlegm is removed, and perhaps the spasmodic cough somewhat relieved; but I watch closely for dyspnœa, fearing the peripneumonic combination. If that should unfortunately occur, you must be directed by the rules laid down for the treatment of inflammation of the lungs.

When the disease has lasted some weeks, and has become chronic, various means have been proposed—as small doses of opium, or of conium or hyoscyamus, musk, acetate of lead, the recent powder of belladonna, in doses of one-eighth to half a grain, or the extract of its root, from the eighth of a grain to a grain: the extract of the narcissus pseudo narcissus has been much extolled, in doses of half a grain to one or two grains every four or six hours: the hydrocyanic acid has been used with varied success: cantharides was formerly a very favourite remedy, particularly when combined with the cinchona: ammonia, æther, and camphor, have all been successively the fashionable remedies.

Various external means have also been employed, as blisters, stimulating embrocations rubbed on the chest and along the spine; but I have so little faith in the use of these, that I shall not fatigue you with their detail, but refer you to the works on medicine for the different formulæ that have been and are still in use.

One of the best remedies is a change of air, although that does not always cure; at least its effects are so slow that it is difficult to attribute the restoration to health to that cause. I had a remarkable proof of this in my own family. Two of my children were seized with pertussis in London; after a fortnight they were removed into Essex, where they remained two months longer with unabated symptoms; I then took them to Paris, and the disease did not finally disappear until they had been there four or five months.

CATARRHUS SICCUS, OR DRY CATARRH.

The generic character of catarrh being an inflammation of the aerian mucous membrane, having for its result a secretion, the expression of catarrhus siccus would seem to imply that it should not be included in that genus; but the term siccus is not to be understood in the positive sense, but in the comparative, since the disease consists also in an inflammation, having for its consequence a secretion, although infinitely less in quantity than in the preceding species.

Morbid anatomy.—The mucous membrane in this affection is of an obscure red or violet colour; it is swollen, and the swelling more particularly takes place in the smaller bronchial tubes, which are sometimes almost entirely closed by it, although occasionally the membrane lining a larger branch will be thickened to the extent of a few lines, whilst in the continuation of that branch, or in its ramifications, it remains in its natural condition. The extent of the inflammation of the membrane is proportionate to the duration of the disease; yet the whole mucous surface has been thus affected in infancy. When the dry catarrh is universal, or even extensive, it always causes emphysema of the lungs.

The secretion in this disease is very different from that of the other species of catarrh: it consists of an extremely viscous matter, formed into globules, of the size of a pin's head, or larger; they are never mixed with air, are semi-transparent, and of a pearly aspect: this appearance is supposed to depend upon the mixture of a small quantity of the black pulmonary matter; a number of little dark spots are also occasionally seen in the globules. This affection is so common, that many persons, who make no complaint whatever, expectorate a small quantity every morning. These secretions have been named by Fourcroy, *bronchial mucus*; by Laennec, from their similarity to pearls, *pearly sputa*, or *sputa margaritacea*, to distinguish them from the mucous and pituitous fluids.

Local signs.—I shall revert to Laennec's work for the description of the signs of this disease, as it is to him we are indebted for their discovery.

The percussion of the chest affords a perfect sound, but the respiratory murmur is lost, or nearly so, at the points corresponding to the bronchial tubes affected. These points vary when the catarrh is general; for often the parts where, on a first examination, the murmur was inaudible, after a short time present it distinctly. These variations depend upon a greater degree of swelling of the membrane at one time than at another, or upon the varying quantities of pearly sputa obstructing the tubes at different periods.

If the engorgement of the smaller bronchial tubes be not carried to its highest degree, the respiratory murmur may still be heard, although very feebly; and at the same points there will be a slight sibilation or clicking, as if of the opening and

shutting of a small valve; this last sound is least common, and can scarcely be distinguished, except upon deep inspirations or coughing: it depends upon the displacement of a pearly sputum by the air. It is probable that these noises would be louder were it not for the dilatation of the air-cells (emphysema pulmonum), which so frequently accompanies this disease.

Functional and general signs.—A moderate dry catarrh will often remain latent for years. Persons so affected perceive only that their breathing is not so free as that of others when they mount an elevation, or run; but when the tubes become extensively affected, they breathe with difficulty, even in a state of repose, and particularly after a meal: some persons referring the sensation of obstruction to one side of the chest only. At a later period, the accesses of dyspnœa become so severe as to merit the name of asthma; and it is one of the causes of the disease we shall hereafter describe under the name of *dry asthma.* Towards the end of these attacks, cough comes on, and the dyspnœa and oppression diminish; and in a short time a few pearly sputa are expectorated, often floating in a little pituitous fluid, by which the symptoms are still further diminished. In very slight cases, the sputa lose their globular form and density, become more abundant, and are slightly tinged by an intimate admixture of a little yellow or whitish and opaque mucus; at other times they have the consistence and appearance of the vitreous humor of the eye: the *vitreous pituita* of the ancients.

A similar ejection of phlegm occurs habitually in many persons subject to slight degrees of dry catarrh; and if the secretion be not suspended, they are never subject to dyspnœa or asthma. Often the quantity is so small, that they do not observe themselves to expectorate; in others, there is really no cough or expectoration, or the cough is extremely slight and dry, and occurs but once or twice in the twenty-four hours; and then, especially if it has come on slowly, or has not been preceded by acute catarrh, it has been called a *nervous cough*, or it has been supposed to be sympathetic of some other affection, so that it has been denominated *gastric*, *hepatic*, *hysteric*, &c., when, in fact, a local examination of the chest would soon enable us to detect its real cause.

When an acute catarrh is grafted upon the chronic dry form, then the dyspnœa suddenly augments, so as to constitute a fit of asthma; it is relieved by expectoration. Upon a recovery from this state, the habitual dyspnœa is somewhat increased, because the disease has extended further in the course of the bronchial tubes.

It happens occasionally, in nervous persons, particularly in hysterical women, subject to dry catarrh, that a short asthmatic paroxysm will occur upon mental agitation. Thus, I had a patient, who, upon any stranger entering the room, commenced to breathe with great difficulty, and the sibilating wheezing was heard all over the parietes of the chest. After a few minutes, the dyspnœa subsided, and nearly all the sibilation with it.

During sleep, or upon the accidental occurrence of fever, the dyspnœa diminishes, and the instant of waking seems to the patient the only time he breathes freely. Finally, when the disease has lasted a considerable time, emphysema of the lungs and its signs supervene.

Causes.—This is a very frequent disease: persons of all ages and temperaments are subject to it; almost all the inhabitants of maritime and cold countries, or of humid vallies, are constantly attacked by it, although in various degrees; and Laennec asserts that half the inhabitants of the driest parts of France, possessing apparently excellent health, present traces under the stethoscope of some slight bronchial engorgement. From an official situation I hold, I have occasion to examine a number of persons in good health, and there are few indeed who do not present some slight wheezing at one point or other of the chest on a deep inspiration.

Gout, hypochondriasis, certain chronic cutaneous eruptions, are supposed to predispose to this disease.

Dry catarrh is often sympathetic of fever: you generally find the bronchial tubes more or less affected in that class of diseases.

Treatment. — The first indication we should have in view is to diminish the inflammatory action going on in the mucous membrane; but, as in the other forms of catarrh, patients rarely bear general bleeding. If, however, the dyspnœa be great, and the subject plethoric, then bleeding is necessary. I often apply leeches with advantage. Counter-irritants, as blisters, the tartar emetic ointment, Burgundy pitch plaisters, and dry cupping, frequently produce a good effect, although not always a permanent one.

When the cough is violent and distressing, you will find opium produces the most beneficial results, given in doses of a grain, or a grain and a half, at bed-time. Laennec administered it in smaller doses, and repeated them frequently.

Our second indication is to diminish the viscosity of the tenacious phlegm which obstructs the small bronchial tubes. The authors of the humoral pathology imagined that certain medicaments had a solvent effect in these cases. Without repos-

ing any confidence in their hypotheses, I can assert that many of the remedies proposed with that intention do much service. I use frequently the common yellow soap, in doses of from five to ten grains, three times a day. The carbonates of ammonia, soda, and potash, in doses of from ten to thirty-six grains a day, mixed in common drinks, were frequently given by Laennec. The ipecacuanha has a very good effect, if long continued. A grain of the powder may be administered three or four times in the twenty-four hours. I have frequently used mercury in severe cases, and am satisfied that, if carefully managed, so as not to excite salivation, it often diminishes the bronchial tumefaction, and occasions a free and diffluent expectoration.

HYSTERICAL COUGH.

Although I have not classed this affection among the catarrhs, still I have placed the description of it here, as it assimilates more to those disorders than any other.

This disease invariably, as far as my experience extends, attacks young hysterical women I have met with it thirteen or fourteen times, and never in the other sex. It usually occurs before the age of twenty. I have not observed a case beyond the age of twenty-five years. It can hardly be called a cough, it is rather a bark; it is a loud hoarse sound, produced by the act of expiration repeated many times in a minute, for hours, days, weeks; I have seen it continue, with but slight intermissions, for months, the patient having scarcely any relaxation from it but during sleep. The voice is almost always affected; it is generally reduced to a whisper, sometimes to perfect aphonia. A sense of soreness is occasionally complained of about the larynx; the breathing is not always difficult, nor is there always pain or oppression in the chest. The disease is rarely accompanied by expectoration, although in two instances I have seen it combined with pituitous catarrh, and then the quantity of transparent viscous fluid thrown up was considerable; but it was no doubt an accidental coincidence. Sometimes the patients are much distressed and weakened; sometimes they preserve their cheerfulness, appetite, and strength.

I know nothing of the morbid condition of parts in this disease, as I never saw a patient die of it. All I can say is, that there is evidently a spasmodic condition of the respiratory muscles, and of the glottis, depending probably upon some peculiar state of innervation.

Treatment.—This affection seems to be as intractable as pertussis, to which indeed it bears some analogy. I have tried bleeding, blistering, drastic purgatives, iron, and various antispasmodics, and I cannot say with the slightest beneficial effect. Change of air seems to do more for the patient than any thing else, although you must not consider it as a certain remedy. As the disease is somewhat rare, I will relate the following case.

I was called to a young lady of about 20 years of age, of a sanguine lymphatic temperament, and who had been the subject of hysterical fits. I found she had been coughing unceasingly for five or six weeks, having no remission except during sleep. She had totally lost her voice. She did not appear distressed, but smiled, and looked as if she thought her state rather ridiculous than distressing. A variety of means had been used, but inefficaciously. I advised a change of air. She took a coasting voyage, and had hardly got to sea before the barking left her, and her voice returned. She continued this voyage a week, and landing upon some part of the coast, her complaint returned. It diminished, but did not altogether leave her, upon getting to sea again; but on her arrival home she became as bad as ever, and continued so, to the best of my recollection, about two months more, till one morning she suddenly exclaimed, "Mother, I can speak!" From that moment her cough ceased, and her voice returned.

PATHOLOGICAL LECTURES,

Delivered in King's College, London,

BY

PROFESSOR MAYO, F.R.S. &c.

Surgeon to the Middlesex Hospital.

V.—*On Malignant Tumors of Bone.*

It will not be long before this subject will have received the elucidation which its importance merits. The researches of Mr. Kiernan into the nature of scirrhus, medullary sarcoma, and melanosis, which are likely in a short time to be laid before the Royal Society, will enable pathologists to classify and to describe these diseases on scientific principles, and with scientific precision. And the expected work, by Mr. Stanley, on the diseases of the bones, will enrich this department of surgical literature with the full history of many varieties of disease of which the student can at present glean but scattered and imperfect notices. In the meantime, let me state the comparatively rude but practical views which, in common with others, I entertain upon this subject.

By malignant tumors are meant a class of affections, which consist in the ab-

normal growth of a part through the formation in it of some new element, which has a tendency to indefinite increase,—the increase having no check but in the sloughing or ulceration of the part,—and the disposition to the particular formation being so strong, that it often manifests itself simultaneously in different parts; and often recurs in a part from which the existing disease has once been entirely removed.

Some of the characters, of which the aggregate forms the idea of malignant disease, are separately met with in more than one of the affections, which have been described in my previous lectures.

In persons of the scrofulous diathesis, the tendency to the deposition of tuberculous matter is often manifested at several points of the system at once; and is liable, after the amputation of an affected limb, to develope itself with aggravation in other parts. But in scrofulous disease there is no enlargement of the bone.

In superabundant formation of bone, the tendency to hyperostosis is sometimes, as I have partly exemplified by Mr. Jeff's case, strongly constitutional; the only thing, then, wanted to stamp the complaint as malignant, is the presence of some new substance. No. 533 (dry pathological specimens) in the museum of the College of Surgeons, is a preparation of *ossification of the lungs*, from a person who died through obstructed respiration; the pulmonary symptoms having supervened shortly after the leg had been amputated for a large exostosis of the femur.

Nevertheless, it should be stated *in limine*, as a remarkable point in true malignant diseases in bone, that they have not the malignancy of similar diseases in the soft parts. When a bone attacked with malignant disease is removed, the disease generally does not recur. The same is observed, though less constantly, if in the amputation the section has been made through the sound part of the diseased bone. But, when an amputation is performed for malignant tumor originating in the soft parts, the disease almost certainly reappears.

Malignant tumors of bone are rapid in their growth; the pain which attends them is very variable: it is generally less when the disease originates upon the surface of a bone, than when it commences in the cancelli and has to expand and force open the crust. The countenance in these diseases is commonly pale, and the expression anxious and haggard.

a. Of Osteo-sarcoma.—The best way to describe this disease is to call it a cartilaginous exostosis. It consists in a vast growth of substance, nearly resembling cartilage in texture, and originating either upon the surface or in the cancellous texture of a bone.

A boy broke the first phalanx of one of the lesser toes; a tumor gradually formed on it, which, when it had attained to the size of a sphere, an inch and a half in diameter, gave him considerable pain. He came into the Middlesex Hospital to have the toe amputated. A section of the tumor is in the museum of King's College. It had at first, and preserves, the appearance of a solid sphere of cartilage growing out of the cancelli of the broken bone. There were many small irregular oblong cells in the cartilage, which were filled with a reddish fluid, and at parts the cartilage grated when cut.

A lad, eleven years of age, was a patient in the Middlesex Hospital, under my care. About a twelvemonth before, he had been kicked by another boy upon the shin. The swelling, which immediately supervened, did not subside, but gradually a considerable enlargement formed upon the part of the bone which had been struck. At his admission, the boy was suffering considerable pain, owing to a blister which had been applied over the swollen subcutaneous face of the tibia, and had left the skin red, tense, and raw. The blistered surface was carefully healed, when the pain went away; but the swelling continued to increase, and after some weeks presented the appearance of an extensive conical tumor projecting from the spine and inner and outer aspects of the tibia, the base of which was five inches in length. The rapidity of the growth of the tumor, and the absence of pain, led me to conclude that the disease was superficial osteo-sarcoma, of which I became certain, when, upon puncturing it, I felt the lancet cut through cartilaginous substance. A stream of florid blood flowed briskly from the puncture, but it stopped on pressure, and the small wound readily healed. The boy, understanding that amputation of the limb was now proposed, left the hospital, and returned into the country. The surgeon under whose care he fell performed a different operation: he divided the skin, and exposing the tumor, cut it away from the bone. For a short time every thing went on well; but before the wound was healed the tumor reappeared, and grew with great rapidity, and bled. The surgeon then amputated the limb above the knee; and the patient eventually did well. The amputated tibia, after maceration, was sent to me, with a description of the tumor. From the description, I have no doubt that it was a genuine case of osteo-sarcoma. The appearance of the bone agrees with this supposition: the crust is thin, of a lighter structure than healthy bone,

irregularly excavated upon its surface, and here and there raised into projecting spines and ridges of light bone, which (I conclude in this case, as it is common in others) formed dendritic ossifications stretching into the cartilaginous growth. There was for some time considerable doubt whether the disease was not returning in the extremity of the divided femur. I believe, however, that it did not. Nevertheless, the temporarily suspicious appearance of the stump suggested to me the advantage, in similar cases, of amputating, if possible, at a joint, to avoid the risk of irritating the structure of another bone (as must happen in sawing its shaft), in a constitution liable to malignant osseous disease.

There are two points which are variable in this disease—the quantity of bone in the structure of the tumor, and the number and extent of the cells. In a specimen of osteo-sarcoma in our museum, of which we have a cast of the entire tumor, and the bone after maceration, the upper part of the femur has thrown out a prodigious mass of thin bony plates, which formed a kind of laminated skeleton to the mass of the osteo-sarcoma.

The largest specimen of osteo-sarcoma which I have seen, was in the head of the tibia. The limb was amputated by Mr. Frogley, of Hounslow. The tumor was spherical, and I think nearly a foot in diameter; it contained a large cavity, the crust formed of the osteo-sarcoma being from an inch to two inches in thickness.

An osteo-sarcoma grows with great rapidity; its surface is smooth and rounded, and conveys to the touch the idea of its cartilaginous consistence.

There is something in the appearance of osteo-sarcoma, which strongly suggests its affinity to gelatiniform carcinoma.

After the femur and tibia, osteo-sarcoma most frequently attacks the lower or the upper jaw. In either case the disease has been more than once successfully removed by excision either through the sound bone, or at the joint. In the only instance which has fallen under my own care, the disease began in the upper part of the nose, and seemed to be confined to the nasal part of the upper maxillary bone. I removed it; and while the patient continued under my observation, the disease did not recur.

b. Of medullary sarcoma.—It is now about a year since a case of this disease presented itself at the Middlesex Hospital. In the year preceding there were three instances of its occurrence,—two in the head of the tibia, one in the head of the humerus. Amputation was performed in each case, and the patients recovered; and I have not heard that in either a return of the disease has taken place.

One of these cases was under my own care. In the course of a few months a large swelling of the head of the tibia had formed, attended with considerable pain. A surgeon punctured the swelling, and forced out nearly a pound of yellow doughy substance. Upon this the patient was sent into the hospital, and the limb—the nature of the case being obvious,—was immediately amputated. The head of the tibia was found to be expanded into a thin membranous shell, with very little bony matter in its texture, the cavity filled with a yellowish substance, like the medulla of the brain, and clotted blood. The deposit of medullary substance extended to some distance into the cancelli of the shaft of the bone.

In the other case referred to of medullary disease of the head of the tibia (of which, like the former, the preparation is in our museum), the amputation was performed by Sir Charles Bell. The external appearance of the diseased part was remarkable for its tense brawny hardness. The disease appeared to have begun simultaneously in the cancelli, and upon the surface of the bone. The cancelli contained brainlike substance, or true medullary sarcoma. The crust of the bone was thin, and of a light brittle texture. The muscles of the back of the leg were externally healthy; but near the bone, for their proper texture, there was substituted a firm white substance which came near to the description of Mr. Abernethy's mammary sarcoma; while the hard, brawny, lobulated, subcutaneous tissue on the fore part, might well have been termed pancreatic sarcoma.

It would almost seem that the medullary deposit admits in some instances of absorption; or else there are forms of disease, of which the early history is unknown;—for enlargements of the heads of bones are met with, in which the shell, reduced (as in the preceding instances), to a thin and hardly osseous capsule, contains only gelatinous fluid, intersected with more or fewer membranous septa.

In a remarkable specimen given to us by Mr. Stanley (a section of medullary sarcoma of the femur, amputated by Mr. Earle), there is seen medullary sarcoma that had originated in the cancelli of the bone, and had caused absorption of the crust of the femur, which, when extenuated, had broken. The fracture is surrounded by a large soft tumor; part of this tumor is medullary, part of a firm, white, opaque, fibrous substance, not cartilaginous.

This white, opaque, fibrous substance, may of itself, I believe, constitute a malignant periosteal growth.

In the preceding case it was combined with medullary sarcoma. In another preparation in our museum, for which the leg was amputated by Mr. Green, medul-

lary sarcoma was found in combination with osteo-sarcoma.

The malignant diseases do not attack the round bones. After the large cylindrical bones, especially the tibia, femur, and humerus, the upper and lower jaw-bones seem their most frequent seat.

There is an excellent case related in the 120th number of the Edinburgh Medical and Surgical Journal, illustrating at once the connexion between osteo-sarcoma and medullary sarcoma of bone, and a remarkable feature, which is occasionally developed in the latter disease—a pulsation, namely, as if the tumor were aneurismal. The pulsation is probably communicated from the contiguous arterial trunk.

The patient was a Rosshire farmer, æt. 68. A month after suffering rheumatism of the shoulder, he fell and bruised the part: some swelling ensued, which never disappeared, but in ten months had greatly increased. A pulsation was now first noticed in the tumor; then more rapid growth, and corresponding increase of pain. The skin was not discoloured; the tumor was elastic, but firm; pressure caused little uneasiness, but motion of the arm gave considerable pain. When the tumor was embraced by the hand in all directions, there was a strong pulsation—a distinct feeling of distention—the hand being visibly elevated. This sensation and appearance were much stronger at the more prominent part, over and in the axilla. The humeral artery was distinctly felt high up, but in the axilla the pulsation was suddenly lost, as if in the tumor. To the feel, the pulsation was sawing and peculiar. The operation of tying the subclavian artery was performed on the 17th January; on the 7th February sudden hæmorrhage supervened: death on the 10th.

Upon making a section of the tumor, which consisted of an enlargement of the upper part of the humerus, there was found a conglomerate mass of medullary matter, irregularly intersected with ligamento-cartilaginous bands, and having intermediate cavities throughout, of a dirty-brown colour, which seemed to have been recently emptied of blood. The bone in its whole diameter, for three inches downwards, had entirely disappeared. A very few spicula were felt by the knife on making the section; these, however, were not visible to the eye, and a thin shell of the head, corresponding to the articular surface, only remained. On disarticulation its surface was sound, as was also the scapular cavity, although the ligamentous structures were much thickened.

c.—Melanosis in bone is of rare occurrence. Mr. Kiernan told me he had once met with it, in conjunction with melanotic disease of other organs.

d.—True scirrhus in bone I suppose to be of rare occurrence. I have mentioned that we have a specimen which looks like a scirrhous tumor, in the medullary cavity of the femur of a person labouring under cancer: and there are in London several other preparations of a similar description. But I am not acquainted with an instance of an undoubted scirrhous *enlargement* of bone.

Mr. Sweatman has a remarkable specimen of scirrhous periosteum. A woman, about seventy years of age, in the cancer ward of the Middlesex Hospital, had carcinoma of the breast. About a month before she died, one eye was observed to protrude, and three days before her death she became suddenly comatose. Upon examining the skull, the dura mater and pericranium, and orbital periosteum, for a considerable extent on the affected side of the head, were found to be thickened and hard: the dura mater was, at one part, a third of an inch in thickness; the arachnoid adhered to it, and partook in the same thickening. The bone is not diseased, but is something more vascular than usual.

In the museum of the College of Surgeons there are several specimens of thickening of the pericranium and dura mater. No. 607 is a section of the right temporal and parietal bones of a young woman, twenty-five years of age. A tumor projects externally, about half an inch above the surface of the parietal bone, and there is a similar tumor situated exactly opposite, on the inside of the skull. These tumors appear, in the preparation in spirits, not unlike that just described, except that the part towards the skull appears opaker than the rest. The opposite section, however, is preserved dried; and the opaker part is thus shewn to consist of short bony threads, in close apposition, which have no continuity with the cranial bones, on which they rest, but must have formed within the tumor. The tumor, I suppose, was malignant. The intervening portion of the cranium is sound, but unusually vascular.

I may add to this lecture, to complete my sketch of the pathology of bone, two points to which I have not yet adverted: one relating to the absorption, the other to the anormal increase of bone.

1. Bone may be partially absorbed without either atrophy, or inflammation, or caries. Certain kinds of pressure produce this effect. The pulsation of the blood in an aneurism against the ribs, or the sternum, or the vertebræ, causes the gradual removal of the part of the bone on which it tells; but the surface left is not diseased; the aneurismal sac has a kind of adhesion to it.

2. Abnormal growth of a bone may be produced (in addition to the causes before specified) by the formation of hydatids within the cancelli. An interesting case of a bony tumor which contained a considerable number of hydatids, is related by Mr. Keate. The tumor was situated between the two tables of the frontal bone of a female, who was about eighteen years of age. Two operations were performed to remove the tumor, an interval of two years and nine months having taken place between them. During this time, various caustic applications (among which were arsenical preparations and actual cauteries) had been used, but in vain, to destroy the surface from which the hydatids seem to form. On the second operation, in the very hard and compact bony substance which formed the base of the tumor, were found five or six cells, containing hydatid cysts; and these were carefully removed. Sulphate of copper and nitrate of silver were occasionally applied to the whole of the denuded surface, and from time to time produced exfoliations of the bone. In eight months after the second operation the wound healed, and the patient enjoyed perfect health.

PRACTICAL OBSERVATIONS IN MIDWIFERY.

By Wm. F. Montgomery, A.M. M.D.

Professor of Midwifery to the King and Queen's College of Physicians in Ireland, and Accoucheur to Sir P. Dun's Hospital.

On Transverse Malposition of the Head, as a Cause of Difficult Labour.

In a former communication in the Dublin Journal*, I insisted strongly on the indispensible neeessity for a eomplete and intimate acquaintance, on the part of the accoucheur, with the mechanism of labour, and especially with the exact relations whieh the different parts of the ehild's head observe with those of the pelvis, during the progress of a natural labour: by the accuracy of which knowledge alone, and our readiness in applying it in practice, can we hope either to understand the actual condition of any ease under our care, or be able to rectify deviations, or remove diffieulties, by means at once easy, safe, and effectual, instead of being compelled to resort to the use of instruments, the applieation of which, however skilfully managed, must always expose both mother and child to a certain degree of danger, and too frequently gives rise to injuries of a very deplorable kind. If it were necessary by facts to confirm a proposition so undeniable, I could scarcely adduce any which would, in my opinion, more powerfully support its truth, or illustrate the advantages derivable from its adoption, than those on which I now propose to offer a few observations.

I presume I may take for granted, that every one engaged in midwifery practice, has from time to time met with eases in which, while every thing seemed favourably circumstanced, and the labour was apparently proceeding expeditiously to its termination, the head has beeome suddenly stationary in the cavity of the pelvis, and there remained for many hours, or perhaps until a necessity has arisen for adopting instant means of delivery; and this too when there really existed no deficiency of space to prevent its free passage. The occasional cause of this speeies of arrest, I believe to be not at all generally understood, which I shall now endeavour to elucidate, by a description of a particular kind of displacement to whieh I have been in the habit, in my leetures, of applying the name of *transverse malposition;* and by the detail of one or two cases, in whieh its detection afforded an opportunity of giving instant and eomplete relief, and happily terminating a severe and protraeted state of suffering.

I may just premise, that in the most perfeetly natural labour, the head enters the pelvis with its longer axis in coincidenee with one of the oblique diameters of that eavity, and with the chin pressed up elose upon the ehest, until the vertex has descended so low as to press upon the soft parts forming the floor of the pelvis; the oeciput then begins to advance towards the areh of the pubis, and the faee retreats towards the hollow of the sacrum; next the chin reeedes from the ehest, and the occiput issuing from under the pubis, the head escapes by revolving, as it were, on a pivot under the anterior wall of the pelvis, so that in this way the head passes through the bony and unyielding chamber of the pelvis, in sueh a position, that it occupies the least possible dimensions, and the departure of the chin from the chest, which immediately requires greater accommodation, does not take

* Number xiii. p. 52, et seq.

place until the occiput having cleared the confines of the pelvis, has unlimited space to allow of its escape. But occasionally this felicitous arrangement is disturbed, and complete arrest of the head produced by the deviation, which occurs thus: the head having entered the cavity of the pelvis in the position already described, the occiput, instead of moving forwards towards the pubis, recedes towards the spinous process of the ischium, and the face, instead of retreating towards the sacrum, falls into the space between the opposite spinous process of the ischium and its tuberosity; and the chin having receded from the chest, the head is placed, with respect to the outlet, in the most unfavourable manner possible, since it presents to it the greatest possible dimensions which it is capable of assuming, its longest diameter resting its extremities on the opposite tuberosities of the ischia, while at the same time the parietal bone rests on the lower part of the sacrum and coccyx, so that the head is in the condition of a ball supported on three nearly equi-distant, solid, and immoveable points; under which circumstances the action of the uterus, however vigorous, seems totally incapable of either changing the relations thus established, or of effecting the delivery, while they continue as they are. On examining, the finger will pass readily between the head and the pubis, and also posteriorly, except at the point of the sacrum; but there, and opposite the tuberosities of the ischia, the head is felt to be closely locked; the anterior fontanelle is found to be in the centre of the presentation, and the sagittal suture can be traced exactly across the outlet from side to side. How completely and how long this malposition will resist the most powerful action of the uterus, and how easily it may be rectified, will appear sufficiently from the subjoined cases; from which also it will be seen, that this difficulty, (occurring as it does at a time when, from the advanced position of the head, and the state of the perineum and other soft parts, delivery is momentarily expected) is likely to be productive of extreme embarrassment to the attendant, the more especially as the previous birth of full grown children, or even the circumstances of the case, may of themselves afford proof, that there is no natural deficiency of space, since the head may without difficulty be raised from its situation, to which, however, it immediately returns, and will there remain until the necessary rectification is effected, which should be done in the following manner. Apply two fingers along the junction of the parietal and frontal bones anteriorly; then, in the absence of pain, press up the forehead, and push it backwards towards the sacrum, and there retain it till the access of the next pain, which will in general complete the rectification, and the delivery is speedily accomplished, at least it so happened in the instances which came under my observation. It is scarcely necessary to add, that if, during the descent of the head, a tendency to this malposition be observed, we should at once endeavour to prevent its occurrence, by adopting the means already pointed out as suited for its correction when established; and this I have succeeded in effecting in a few instances.

Case I.—On Wednesday, July 15, 1829, I was requested to see a patient with the late Mr. Gregory and Dr. Carter; labour had commenced on the previous Monday evening, and proceeded actively on Tuesday; by six o'clock, P.M., the perineum was distended, and the head apparently on the point of being born: in this situation, however, it remained at nine o'clock, A.M. of Wednesday, when I saw her; although the uterus had continued to act most energetically the whole of the intervening time, and the soft parts were perfectly relaxed. It was the patient's second labour; she was young, healthy, and well-formed, and had about eighteen months before borne her first child, which was full-sized, after an easy labour of about five or six hours, so that deficiency of space was not probable. On examination I found the head pressing on the perineum; I could pass my finger quite easily between it and the symphysis pubis, but at the sides there was no room at all: the anterior fontanelle was in the centre of the passage, the sagittal suture coincided with the transverse diameter of the outlet, and the occiput turned to the left ischium: the uterus was acting violently, but produced no other effect upon the head than that of pressing it a little downwards during each pain, on the cessation of which it immediately resumed its original situation. Under these circumstances, I proposed manual rectification of the dis-

placement evidently existing; and having applied my fingers, as already described, along the side of the forehead, I raised and pushed it backwards, towards the right sacro-iliac symphysis, in the interval between two contractions of the uterus; I there retained it, and on the accession of the next pain I repeated the pressure backwards, when the forehead immediately glided to its proper place, at the same time the vertex moved forwards to the arch of the pubis, and *in about two minutes* the delivery was completed by the birth of a fine healthy child.

Case II.—On the 14th of January, 1834, while lecturing at Sir Patrick Dun's Hospital, I received an urgent message from Mr. Dunlop, requesting my assistance in a case of obstructed labour, which he had been called to see, and in which, from the extreme violence of the uterine action, he apprehended rupture of the uterus, if the head was not speedily extricated: it was the woman's fifth labour, the four former having been short, and in every respect favourable. In the present instance, symptoms of labour had come on the evening before, the pains had continued gentle through the night, but towards morning they became more active, and at half-past seven o'clock the head was pressing upon the perineum to such a degree that its exit was momentarily expected; but there it remained, without any further advance, when I arrived at half-past eleven, although the uterus had been, during the whole of the intervening four hours, acting incessantly, and so powerfully that its rupture was with great reason apprehended. On examination, I found the perineum and soft parts protruded by the head; they were unusually relaxed and yielding; the head lay across the outlet of the pelvis, with the occiput resting against the tuberosity of the *right* ischium, and the forehead against the left, having probably descended in the second position; there was abundance of space between it and the pubis, *and it could be easily raised into the cavity of the pelvis*, but the next pain instantly forced it back to its resting-place, and when there, the uterine action, although so strong, had no further effect on it whatever. I immediately adopted the same mode of rectification as in the former case, by elevating the forehead and pushing it round towards the sacrum, when it almost instantly assumed its proper relations under the influence of a pain, *and the very next contraction of the uterus expelled it*; the body immediately followed, and the delivery was completed in *less than two minutes* from the time of effecting the change of position in the head. The child was alive and vigorous. I was fortunate enough in this case to have the valuable assistance of my friend, Dr. Darley, who happened to be with me when I was sent for.

With reference to these cases, it is to be observed, that the subjects of them were women who had already borne children without any difficulty, and that there was evidence at the time, from the circumstances of their cases, that there was abundance of space, as the event fully proved; and yet the obstacle created merely by this kind of malposition of the head was such as to resist, in the one instance for *fifteen hours*, and in the other for *four*, action of the uterus, so powerful that it effected the delivery almost the very instant that the displacement was corrected.

As to the cause of this malposition, I am not prepared to offer any satisfactory explanation, nor is it, as far as I can see, a matter of the least consequence. The idea of Levret, that such misplacements of the head were caused by the situation of the placenta, is so unsupported by either facts or reasoning, and is indeed so fantastic, that I think we may dismiss it at once without further consideration. Neither is the hypothesis, which would explain them by obliquity either of situation or action of the uterus, in any degree more satisfactory. Rœderer ascribes some such deviations to misdirection of the shoulders, which he supposes in such cases to be placed across the smaller diameter of the brim; that this may be so occasionally is not improbable, but in the particular species under consideration, I think it certainly is not the case, because we can so completely correct it, merely by changing, and slightly too, the position of the head without moving the child's body at all. One thing, however, is certain—that when the malposition has taken place, the chin of the child has receded from the chest, and the forehead has sunk as low as the occiput, and that its re-elevation is essential to the rectification, and must be accomplished before

delivery will take place; for while the transverse position continues, the natural efforts will not be sufficient, the forceps will not answer our purpose, and turning is out of the question; so that if the real nature of the case be not recognized, recourse will be almost certainly had to the appalling operation of cephalotomy, and a human life unnecessarily sacrificed. It seems very reasonable to suppose that an unusual projection or curvature of the spinous process of the ischium might have the effect of producing this accident, because, under such circumstances, the forehead being prevented from gliding backwards, and being still acted on by the uterine contractions, would almost of necessity be forced downwards into the situation where we find it in such cases, and the occiput would, of course, assume the corresponding situation at the opposite side of the outlet. *.

OBSERVATIONS ON INTERMITTENT FEVER.

To the Editor of the Medical Gazette.

Sir,

The following observations would have reached you long ere now, had not an unexpected call withdrawn me from home. Should you now deem them worthy of a place in your Gazette, their insertion will oblige

Your obedient servant,

Al. Paterson.

Maçero, Brazil, Oct. 1, 1834.

Of forty-one cases of intermittent fever which occurred on board the H. C. ship Barrosa, in the years 1832-33, three took place from seventy to eighty-three days after leaving England; thirty-one while lying at Whampoa; and seven from two to three months after our departure from Canton, and ninety-three days after ague had ceased to manifest itself in the ship.

Whampoa being a situation peculiarly adapted for the production of marsh miasms, we may reasonably infer that it was the principal cause of the agues which there prevailed, but it contributed nothing to the production of those which occurred at sea, since these did not show themselves until the vessel was widely distant from all miasmatic influence. I stop not, at present, to inquire into the probable origin of these latter cases, but hasten to remark, that they were in no way connected with organic affections, and that they demonstrate the truth of the generally received doctrine, that "febrile miasm arising from marsh lands is the most common cause of intermittents, but by no means the only external agency capable of producing them."

It has been the practice of many to prescribe a great number of medicines in the paroxysm of intermittents, more with a view to alleviate the febrile attack than to prevent its recurrence. But since a return of the fit may, in most cases, be prevented by proper treatment during the intermission, and since the medicines serviceable in one stage of the paroxysm are generally injurious in the others, often exerting a noxious influence on the whole course of the disease, medical operations ought to be confined to the season of intermission, except where the unusual severity of any particular symptom demands immediate interference. The high authority under which "bleeding in the cold stage" has been introduced to the notice of the profession, may appear to exempt it from this remark. As far as my own experience enables me to judge, I must say, that it has always appeared to lengthen the convalescence, without producing any decided benefit, except where the disease was accompanied by organic affections, when bleeding will be equally efficacious, and more conveniently performed, at another period.

The intermission being, then, the most important season for medical interference, I pass on to detail the comparative advantages of a few of the remedies then generally used. The most valuable of these is the sulphate of quinine, ten grains of which are to be taken every three hours during the intermission of a quotidian. In tertians the dose should be diminished, and the interval increased, to five grains every six hours. In quartans the interval may be still longer. When a recurrence of the fit has been prevented, it will be sufficient to take five grains twice a day during the first week, and once a day

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From the Dublin Journal.

during the second, in order to guard against a relapse.

The remedial power of quinine is much greater when administered in this manner, than when one or two large doses are taken a little before the expected paroxysm; for although these subdue the disease, the convalescence is commonly protracted by vertigo, disorder of the digestive organs, and irregular action of the sanguiferous system—effects often produced by dietetic irregularities, and more frequently by the common practice of administering this remedy in conjunction with wine or spirits—a practice founded upon an erroneous pathology, and deserving of the severest reprobation. It is also not unimportant to remark, that when quinine has been properly administered, and attention given to regimen, cathartics are rarely proper, as they tend to interfere with its action, and to debilitate the patient. The white and furred tongue so common in this class of diseases, being indicative of nervous irritation, does by no means authorise the use of purgatives.

In thirty-two cases in which I prescribed the quinine as above, a second febrile attack was prevented, except in two, and these were complicated with disease of the liver and enlargement of the spleen. In three cases, ℥xx of the liquor arsenicalis, and in two, ℥x. were administered at the same periods as the quinine. In three of these the paroxysm recurred thrice; in one, four times; in the fifth, irritability of the stomach and bowels forbade a continuance of the remedy. Two drachms of bark were, after a like manner, given to four patients, of whom two had a second, and two a third febrile attack. In all these cases the debility was greater, and the convalescence much more protracted, than when quinine was used; and it did not appear that any one of the remedies exerted a greater power than the others in fortifying the constitution against a relapse.

I may add, as I close this short paper,—the practical inferences from which are sufficiently obvious,—that since my arrival in Brazil, daily experience convinces me that the above cases exhibit a result which may ordinarily be expected.

CASE OF CONGENITAL MALFORMATION.

To the Editor of the Medical Gazette.

Sir,

An unusual example of congenital malformation having lately come within my observation, I beg leave to forward a brief account of it for the columns of your journal.

Mrs. R. æt. 25, the mother of three children, was taken with her fourth labour, after a gestation (according to her own account) of forty-three weeks. Mr. Holroyde, of this town, was summoned to her aid, and in the course of a couple of hours she was delivered of a small but well-formed female child, to whom attention was soon particularly drawn, from the continued gasping character of its respiration, and the circumstance of the heart's pulsation, instead of being felt at the usual site, being observable at the right side of the chest.

After living upwards of an hour, although every appropriate means were used, the child ceased to breathe. On the following day an inspection was made by Mr. Holroyde, in the presence of Mr. W. B. Stott, two medical pupils, and the present writer, when the following appearances presented themselves.

The heart (the pericardial envelope of which was more vascular than usual) was observed lying on the right side, between the fifth and sixth ribs, and compressing the three pulmonary lobes, which, upon examination, were found to be extremely small, and partially inflated, but apparently quite healthy. The same side of the chest contained about two ounces of serous fluid. The left cavity of the thorax was occupied by its two pulmonary lobes (small and dark coloured), the smaller lobe of the liver, the stomach, the spleen, the whole of the small intestines, and a great part of the larger ones.

In the abdomen, the right lobe of the liver (somewhat darker than I have generally seen it in new-born children) and the descending portion of the colon, apparently enlarged, presented themselves.

Upon proceeding to more minute examination, we found the *left wall of the diaphragm, posteriorly, entirely wanting;* not that the muscle presented an aperture admitting hernial protrusion,

but was (that portion of it) congenitally absent. Hence the position of parts; hence the mechanical obstruction to respiration; and hence the subsequent death of the child.

The kidneys, bladder, uterus, &c. it is scarcely necessary to add, were healthy, and *in situ*.—I am, sir,

Your obedient servant,

JOHN ALEXANDER, M.D.

One of the Medical Officers to the General Dispensary for Children, Manchester.

November 16, 1834.

ON

BELLINGERI'S CLAIMS AS A PHYSIOLOGIST.

To the Editor of the Medical Gazette.

SIR,

THE musical world expressed great delight at Paganini's reiterated performance upon one string. The physiological world has been now for a long period amused,—to tiring, I am afraid,—with a parallel display. What the fourth chord of the fiddle was to Paganini, the "uses of the nerves" have been to more than one physiological performer.

Of those who have harped upon this string, Sir Charles Bell has produced the grandest composition: he has sounded every note, from the octave of the cerebral nerves to the cauda equina. Unfortunately, however, for his permanent fame, his best parts are the appropriated thoughts of others, which gives a sort of falsetto quality to his performance, that captivates the vulgar, but displeases a correct ear.

My own composition upon this string is in three parts. The first is the restoration of the true and original movement of Sir Charles Bell, beginning with the murmurs of the respiratory system, throwing instinctive expression upon the seventh, and playing a voluntary with feeling upon the fifth—the voluntary and the feeling being repeated on the anterior roots of the spinal nerves, and sympathy and the modulation of vegetable life (or the organ stop) being exemplified in the posterior roots. The second (to leave jesting), is the vindication of my own discovery—that the facial branches of the fifth minister exclusively to sensation, and that the portio dura is the source of every mode of muscular action observed in the face, whether instinctive or deliberate*. The third is the rendering to Magendie the credit, to which he is entitled, for having first experimentally proved that the anterior roots of the spinal nerves are for motion, the posterior for sensation.

The Edinburgh Medical Review has recently advocated the claims of another. A very able writer in that excellent journal, after giving deserved praise to Bellingeri's anatomical inquiries respecting the nerves, has asserted that *he* was likewise the first to make out their physiology. I find, however, upon a careful examination of Bellingeri's thesis, that this opinion is incorrect. Bellingeri's views of the functions of the nervous system were ingenious, but, like Sir Charles Bell's, erroneous. Bellingeri attributed to the facial branches of the fifth both sense and motion, like Sir Charles Bell; but, in addition, he attributed *both the same endowments* to the seventh; drawing very curious but false distinctions between the supposed endowments of the two. Of the spinal nerves, Bellingeri considered the anterior roots to be the source of *flexion*, the posterior roots, of *sensation* and *extension* jointly. I have subjoined, in reference to the cerebral nerves, the extracts from Bellingeri necessary to prove the correctness of my statement.—I remain, sir,

Your obedient servant,

HERBERT MAYO.

19, George-Street, Hanover-Square.
November 18, 1834.

Selecta e "Caroli Francisci Bellingeri Dissertatione Inaugurali," 1818.

"Partium vero, in quibus inscritur, vitæ organicæ præprimis conferre par quintum nobis ratio suadere videtur."—P. 121.

"Si igitur ubi solæ sunt quinti paris ramificationes, uti in ramo lacrymali, nasali, dentalibus et palatinis, ibi sola est organica vita, nonne probabile redditur, quum in musculis et integumentis frontis, labiorum, nasi, et oris, universæque faciei distribuitur, ipsorum tantum vitæ organicæ famulari; animalem vero vitam, motum scilicet voluntarium, et sensum animalem ab adjunctis nervis pendere."

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* *Vide* my Anatomical Commentaries, and Outlines of Physiology.

"Certe involuntarius iridis motus, involuntarius quoque musculorum internæ auris, regitur a quinto."

"Igitur et voluntarium musculorum faciei motum, et animalem sensum tactus a septimo pendere, consonum rationi videtur."

"Animi pathemata præprimis per ramificationes quinti paris mire in faciem depinguntur."—P. 123.

"Jamvero ad maxillarem inferiorem gradum facimus, quem vidimus in anatome ramos tribuere musculo mylohyoideo, ventri anteriori digastrici, omnibusque musculis in mento ipsiusque viciniis existentibus. Aperit inde maxillam inferiorem, et concurrit ad oris occlusionem, et diductionem; famulatur quapropter alimentorum sumptioni, masticationi, atque deglutitioni."—P. 156.

"Quintum denique par omnes hosce involuntarios motus absolvere, comprobat observatio monstri a Laurence descripti, in quo deficiente septimo pare, et presente quinto, ciborum assumptio, succus, masticatio, et deglutitio perfecta est."—P. 158.

CHARTER

OF THE

ROYAL MEDICAL & CHIRURGICAL SOCIETY OF LONDON.

[Several correspondents having begged for further information regarding the incorporation of the Medico-Chirurgical Society, we have thought the best plan would be to insert a copy of the Charter.]

William the Fourth, by the Grace of God of the United Kingdom of Great Britain and Ireland King, Defender of the Faith—To all to whom these presents shall come, Greeting:

Whereas John Elliotson, Doctor of Physic, Sir Astley Paston Cooper, Baronet, and John Yelloly, Doctor of Physic, have, by their petition, humbly represented unto us that a Society was formed in the year one thousand eight hundred and five by a considerable number of physicians and surgeons of eminence in London, for the cultivation and promotion of physic and surgery, and of the branches of science connected with them, of which the last two named of the petitioners were original members; and that the said Society has expended considerable sums of money in the purchase and collection of a large and valuable Library, and has published eighteen volumes of Transactions which have had a very extensive circulation. And whereas they the said petitioners have humbly besought us that we should give to them and to the other persons who have already become members of the said Society, or who may at any time hereafter become members thereof, our royal charter of incorporation for imparting greater stability and effect to the designs of the said Society. Now know ye, that we, being desirous of encouraging a design so laudable, have of our special grace, certain knowledge and mere motion, willed, granted and ordained, and do by these presents for us, our heirs and successors, will, grant and ordain that the said John Elliotson, Sir Astley Paston Cooper, and John Yelloly, and such others of our loving subjects as are now members of the said Society, or who shall at any time hereafter become members thereof, according to such bye-laws as shall hereafter be framed or enacted, shall by virtue of these presents be called Fellows of the said Society, and shall be one body politic and corporate, by the name of *The Royal Medical and Chirurgical Society of London;* of which Society we do hereby declare ourselves and successors if they shall think fit, the Patron, by which name they shall have perpetual succession, and a common seal with full power to alter, vary, break and renew the same at their discretion, and by the same name to sue and be sued, to implead and be impleaded, to answer and be answered unto, in every court of us, our heirs and successors, and be for ever able and capable in the law to purchase, receive, hold, possess and enjoy to them and their successors any goods and chattels whatsoever, and also be able and capable in the law (notwithstanding the statutes of mortmain) to take, purchase, hold and enjoy to them and their successors any lands, tenements or hereditaments whatsoever, the yearly value of which shall not exceed in the whole the sum of two thousand pounds, computing the same respectively at the rack rent which might have been had or gotten for the same respectively at the time of the purchase or acquisition thereof; and shall have full power

and authority to sell, alien, charge or otherwise dispose of any real or personal property so to be by them acquired as aforesaid, and to act and do in all things relating to the said corporation in as ample manner and form as any other our liege subjects, being persons able and capable in the law, or any other body politic and corporate in our said United Kingdom of Great Britain, may or can act or do.

And we do further declare and grant that for the better government of the said Society and for the better management of the concerns thereof, there shall be, from the date of these presents thenceforth and for ever, a President of the said Society, who with twenty Fellows to be elected in manner hereinafter mentioned shall form the Council. And we do hereby appoint the said John Elliotson the first President of the said Society, and the said Sir Astley Paston Cooper and John Yelloly the first members of the Council, to continue in office till the first day of March next. And we further direct that within four months from the date of these letters patent, a general meeting of the Fellows of the said Society shall be held, who shall be authorized by method of ballot to elect eighteen fit and proper persons as officers and other members of the Council, to complete the number of twenty-one, of whom including the President we have willed that the Council shall be composed, and that such additional persons shall likewise continue in office till the first day of March next, and till other fit and proper persons be chosen in their room.

And our further will and pleasure is, that the Fellows of the said Society shall and may on the first day of March one thousand eight hundred and thirty-five, and also shall and may on the first day of March in every succeeding year, or as near the same as conveniently may be, assemble together at the then last or other usual place of meeting of the said Society, and proceed by method of ballot to nominate and appoint a President of the said Society, and such officers and other members of the Council as may with the President form the number of twenty-one, of whom we have willed that the Council shall consist; and also may in case of the death, resignation or removal of the President or any officer or other member of the Council within the space of three months next after such death, resignation or removal, elect some other person being a Fellow of the said Society to supply the place of such President or officer or other member of the Council. And our further will and pleasure is, that no Fellow who has filled the office of President for two successive years shall be again eligible to the same situation until the expiration of one year from the termination of his office, and that not more than two-thirds of the Fellows who have formed the Council of the preceding year shall be re-elected members of the Council at such annual meeting. And we do further grant and declare that the Fellows of the said Society or any ten or more of them shall and may have power from time to time at the meetings of the said Society to be held at the usual place of meeting of the said Society, or at such place as shall have in that behalf been appointed, by and with the consent of not less than four-fifths of the Fellows present, to elect such persons to be Fellows of the said Society, and all Fellows to remove from the said Society, as they shall think fit; and that the Council hereby directed to be appointed and the Council of the said Society for the time being or any three or more of them, all the members thereof having been first duly summoned to attend the meetings thereof, shall and may have power according to the best of their judgment and discretion to make and establish such bye laws as they shall deem proper and necessary for regulating the affairs of the said Society, and also the number and description of its officers, and also the times, place and manner of electing and removing the Fellows of the said Society, and all such subordinate servants, officers and attendants as shall be deemed necessary or useful for the said Society, and also for filling up from time to time any vacancies which may happen by death, resignation, removal or otherwise in any of the officers or appointments constituted or established for the execution of the business and concerns of the said Society, and for regulating and ascertaining the qualifications of persons to become Fellows of the said Society respectively, and also the sum and sums of money to be paid by them respectively or any of them, whether upon admission or otherwise, towards

carrying on the purposes of the said Society, and also the number, qualifications and privileges of such persons as they may from time to time deem it proper to admit as honorary Fellows; and such bye laws from time to time to vary, alter or revoke, and make such new and other bye laws, as they shall think most useful and expedient, so that the same be not repugnant to those presents or to the laws of this our realm: provided, that no bye law hereafter to be made, or alteration or repeal of any bye law which shall hereafter have been established by the same council hereby directed to be appointed, shall be considered to have passed and be binding on the said Society, until such bye laws or such alteration or repeal of any bye laws shall, after such notice to the Fellows as from time to time may be deemed expedient by the said Society, have been confirmed by ballot by the members at large of the said Society, ten at least of the Fellows of the said Society being present: and provided that no such bye law or alteration or repeal of any bye law shall be deemed or taken to pass in the affirmative, unless it shall appear upon such ballot that not less than two-thirds of the Fellows present at such meeting shall have voted for the same. And our further will and pleasure is, that it shall be lawful for any three Fellows, by writing under their hands transmitted to the President or such other officer or officers as may by the bye laws hereafter to be made be designated for the purpose, to recommend to the council any new bye laws or alteration or repeal of any existing bye laws; and in case the council shall not agree to such new bye laws or alteration or repeal of any existing bye laws, then our will and pleasure is that such propositions shall, if required by the said three Fellows, be submitted to the consideration of the Society at large, and determined on by them in the same way as has been directed with regard to new bye laws or alterations or repeals of existing bye laws which have been approved by the council. In witness whereof we have caused these our letters to be made patent. Witness ourself, at our palace at Westminster, this thirtieth day of September, in the fifth year of our reign.

By Writ of Privy Seal

EDMUNDS.

MEDICAL GAZETTE.

Saturday, Nov. 22, 1834.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

MEDICAL ORGANIZATION IN AUSTRIA.

In a subsequent page will be found a document which we read with much interest; and it strikes us that many of our readers will be obliged to us for laying it before them. On various occasions we have noticed the arrangements of the profession in other European states, and particularly, in the course of the present year, we gave an ample detail of the reformed system in Prussia. Relative to the medical affairs of Austria, a nation occupying so distinguished a position among the more enlightened countries of Europe, we were anxious for a trustworthy, and, as much as possible, an official account; this we are glad to have obtained at last, through the praiseworthy diligence of our Belgian contemporary. It will be duly appreciated, we doubt not, by all who peruse it—more especially the first part, respecting medical education, and the modes by which a supply of well-qualified practitioners for the Austrian States is secured. The other portion, concerning the arrangement of the profession throughout the different parts of the empire, will perhaps be considered more as matter of curiosity than of utility. It is so unlike anything ever even contemplated in this country, as desirable in the adoption, that most readers cannot fail to be at least struck with the novelty, as well as contrast to our system, which it affords.

The educational machinery of Austria is simple and well arranged. Making all due allowance for the difference between it and the mode which has so

successfully prevailed among us for so many years, we can sincerely admire the sort of discipline laid down for the Austrian student. We think it superior to that of either France or Prussia, as affording a suitable curriculum for the general practitioner. In Prussia, it is true, the preliminary education in arts required of medical aspirants to the Doctorate, renders that class perhaps higher in intellectual attainments of a general nature than any similar body to be found on the continent; but for the ordinary, and most generally useful, class of practitioners, the education appointed in Prussia is certainly inferior to that in Austria. In the latter country there are not those various and distinct courses which are prescribed in the former, for each class of practitioners, according to the object which he may choose to have in view—whether he will graduate as a practising physician, or seek a diploma as a surgeon of the first class, or as a surgeon of the second class—whether he will practise in town, or be content with the provinces—for in all these circumstances the requisite education is respectively modified. But in Austria there is one common course of professional discipline, at least up to the period of selecting which branch the candidate will adopt for practice; and that common course is of a most ample and comprehensive kind. With a preliminary education equal to that required on entering the medical schools of Paris, the Austrian has a decided advantage over the French arrangement for professional education, if it were only in the additional year devoted to it in the former country; the curriculum in Austria occupying a period of five years, while that in France requires but four.

If certain of our reformers in this country were really desirous of "levelling upwards," we could not propose to them a better standard, or model of imitation, than the Austrian system. It seems not unsuited, too, to become their *beau ideal* in another particular, inasmuch as it approaches their grand desideratum of a single faculty; and they find in it, moreover, a metropolitan body conferring degrees in the two great branches of the healing art. We could ourselves, indeed, be even content with the adoption of some such system among us; for it exhibits in actual practice that sort of projected alteration of which we have all along been the advocates. All the requisite studies are pursued in the metropolis—all the necessary qualifications, literary and professional, are there attained—and there, too, is (as we would have it) the final verdict of competency pronounced by a competent tribunal.

There are, however, one or two points in the Austrian arrangements which we should be glad to see modified. Among the examiners, for example, at the final ordeals (the *Great-goes* we suppose we may call them), we would not have any of the actual professors appointed. The arbiters of the student's competency should not be those who are in daily habits of intercourse with him as his teachers: though the system which prevails on the continent, of paying the pupils' fees into the government purse, and remunerating the professors by salaries, takes off much of the objectionableness of the proceeding to which we allude. Here, in this country, most undoubtedly, under any new arrangement that may be adopted, the possibility of one and the same set of men being both examiners and teachers were perfectly inadmissible. In point of qualification for so important an office—abstractedly from the partial influences which might come into play—few, we are aware, ought to be considered as

better adapted for the task of gauging the candidates' acquirements; but the very suspicion attaching to the circumstances, would, in the end, place in a stronger light the necessity of placing none in the chair of judge who had not previously resigned that of the professor.

The repeated examinations—weekly, semestral, and annual—to which the students are obliged to submit, in order to give proof of their progress, or otherwise be thrown back as incompetent, are all excellent in their way, and worthy of imitation wherever there are schools of medicine established.

With respect to that part of the paper which relates to the organization of the profession, we have but few remarks to make. It is, as we have said, curious, and perhaps, for a country governed as Austria is, the best suited to the circumstances. There are not those numerous grades and orders of practitioners recognized there which we find in Prussia; but the appointments of provincial and district state medical officers are on fully as adequate a scale as in the latter country, and commissioned as if the whole population of the land constituted but *one great army*. The care bestowed on the public health by the Austrian government is truly admirable, and many of the measures ordained for the purpose cannot but be ultimately productive of much benefit to medical science. We allude more particularly to the annual reports required of the *Proto-Medici;* containing minute particulars of every thing relating to the salubrity of their respective provinces, and including the hospital returns, remarkable cases, observations, &c. Such a mass of information, well drawn up, must prove of the highest value at some future day, when scrutinized and digested by a Van Swieten, a Hildebrand, or a De Haen.

There is one remarkable duty connected with the office of the Austrian *Proto-Medicus*, which the reader will not omit to notice; and that is, the exercise of a *censorship* over the medical press. By the terms of his commission, this officer must look to the purity of the medical journals from all matter of political import or tendency: he must inspect the manuscripts of professional authors, who in their turn are obliged to submit their papers for his approval previous to publication. This is, it must be confessed, rather an odd precaution against treason—it certainly passes all our experience; for who ever heard of a political squib shot off in the shape of an hospital report, or even of disaffection to the body politic being couched in an account of the affections of the body corporate? It may be that the Austrian legislator thought it rather suspicious that there should be so much said in medical books about the *constitution*, the necessity of altering the *regimen*, and of *letting blood* freely at certain times. But however it be accounted for, it is well we have not the felicity of being supervised by an Austrian censor: for we, as well as most of our brethren, have the name of being political—though how the fact could be proved against us we have not an idea. Were we at this moment to write an article founded on the *dismissal of ministers*, and to draw our inferences, or hazard our predictions, relative to the chances of a certain stock-jobbing establishment obtaining a charter from the new administration — supposing for a moment that it ever had a chance of one from the old, we should fairly lay ourselves open to the charge of being political partizans. But as we never indulge in these speculations, we shall not permit ourselves to say more on the subject at present.

PRESENT SYSTEM
OF
MEDICAL EDUCATION,
AND
THE ARRANGEMENT OF THE MEDICAL PROFESSION,
IN THE
AUSTRIAN STATES.

THE laws by which the profession in Austria is governed, were enacted in the reigns of Maria Theresa, of Joseph II., and of the Emperor Francis I. The object is the improvement of medical education in the schools, the supplying of suitable practitioners for the people, and the regulation of the *pharmaciens*, who alone are permitted to deal in drugs and medicines. They further contain clauses of great severity for the checking of charlatanism; and in order that the magistrates may be fully acquainted with every thing relating to hygiène and medical police, appointments are provided in the several districts for a body of well-instructed and experienced medical persons, specially entrusted with this duty.

1. SYSTEM OF EDUCATION.

There is no distinction made, in the Austrian universities, between the education of physicians and that of surgeons. The students destined for either pursuit must attend the courses of both branches of the healing art, and not until they have completed their curriculum are they allowed to choose which they shall practise: but they may practise both if they choose, and be found properly qualified.

The qualification for a doctor of medicine or surgery, consists in a five years' attendance of lectures in some national university; the three first years being devoted to the study of the collateral sciences and the theoretical parts of medicine, and the last two being employed in special therapeutics and practice, at the bed-side of the patient. The following is the order in which the several branches are studied:—

- **First Year...**
  - 1st Semestre.
    - A general introductory course of medicine and surgery.
    - A course of anatomy.
    - A course of special natural history.
  - 2d Semestre.
    - The courses of anatomy and natural history repeated.
    - A course of botany.
- **Second Year.**
  - 1st Semestre.
    - Anatomy and physiology of a more advanced character.
    - General chemistry.
  - 2d Semestre.
    - Anatomy and physiology continued.
    - Pharmacy and animal chemistry.
- **Third Year.**
  - 1st Semestre.
    1. General pathology (etiology, semeiology, and general therapeutics).
    2. Materia medica and chirurgica, dieteties, and art of prescribing.
    3. Theoretical surgery (general and special pathology of surgical disorders).

    Midwifery.
  - 2d Semestre.
    - Courses 1, 2, 3, preceding, continued.
    - Bandages and surgical instruments, from June till the end of the medical year.
- **Fourth Year.**
  - 1st Semestre.
    1. Special therapeutics of internal maladies.
    2. Internal clinique.
  - 2d Semestre.
    - 1 and 2 preceding continued.
    - Veterinary medicine.
- **Fifth Year.**
  - 1st Semestre.
    - 1 and 2 of preceding year continued.
    - Forensic medicine
  - 2d Semestre.
    - 1 and 2 continued.
    - Medical police.

It is to be observed, with reference to clinical instruction, that, both in Austria and Prussia, students who have completed their theoretical courses are divided into practising pupils and assistants; the former being entrusted with the treatment of a

certain number of patients, whom they visit under the inspection of the clinical professor. If they acquit themselves well, he does not interfere; if not, he instructs them in the questions which they ought to put. After each visit, the professor interrogates the pupil as to the class, order, and species of the malady, the prognosis, and the indications. If the pupil be right, he is requested to prescribe aloud. An assistant is attached to each practising pupil, who goes round with him, and in the course of six months becomes a practitioner himself.

The lectures on physiology, pathology, materia medica, and special therapeutics, as well as the clinical remarks at the patient's bed-side, are delivered in Latin: in all the other courses the German is the language employed. In Hungary, Poland, and Italy, the language of each country respectively is used.

Previous to admission to the medical schools, the pupil must produce a certificate of having attended a three years' course of humanity in some national school; and pupils are arranged, in general, in three classes; the first consisting of those who have answered best, and obtained the title of *eminent*, the others according to their respective merits. Diligence and moral conduct are high recommendations in the certificate for admission: in fact, the law expressly declares that this must be seriously attended to, in order to exclude, as much as possible, from the study of an art so important and difficult as that of medicine, all those who are not more or less distinguished by their attainments and good conduct.

Matriculation is not attended with any expense.

Students are forbidden to smoke cigars, or to frequent drinking-houses.

No student can advance to a higher class without having attended that immediately preceding it; and he must pass an examination. If his answering be but second-rate, he must go through his last courses again; and if upon another trial he be found deficient, his name is erased from the list of medical students, and he is precluded from entering any other national university.

Every professor is bound to examine his class once a week publicly, for at least half an hour. The results he must note down, for the better arrangement of the classes. At the end of every semestre, the pupils are examined in their previous courses: the first examination takes place in the latter part of March, the second towards the end of August; the particular day and hour being announced a month previously. The director and a commissioner of instruction are obliged to attend at these trials; and the professors are enjoined by the law to be as strict as possible, and not to allow themselves to be carried away by an ill-judged indulgence. It is during the first year they are expected to be most severe, in order to get a timely riddance of those students who are dull or negligent, and to secure the state against the danger of having ignorant physicians or surgeons admitted to practice. In the certificates given on these occasions, not only the abilities of the pupil are set forth, but his moral conduct is noted.

The fees paid by each student amount to 30 florins (about 3l.) a year—3 florins a month. These charges go chiefly to the support of a certain number of poor but respectable students, who belong to large families of straightened means, and are distinguished for their diligence and good behaviour.

In order to be admitted to the final examinations, the pupil must shew that he has acquitted himself well at the weekly ones, as well as at those at the end of each semestre. The Dean of the Faculty is obliged to pay special attention to this rule, or otherwise forfeit 20 florins to the general fund. Two students cannot be examined at the same time. The judgments of reception are *Satis, Bene*, or *Valde bene*. If two professors vote for the candidate's rejection, he must be examined over again at some future time, going through certain courses prescribed to him in the interval. If he decline this, he is not entitled to have his examination fees refunded to him; but if he submit to a second trial, he has nothing additional to pay. Not so, however, if he be rejected a second time: he must pay his fees afresh for a third examination. Nobody can be examined more than three times: a third rejection disqualifies the candidate from ever practising in Austria.

Previous to the admission of the candidate to examination, he must produce an account of two medical cases treated by himself, and also a report in legal medicine. These papers must be forwarded to the Dean, who communicates them to the examiners, and upon their approval the candidate is admitted to the final *rigorous* examinations.

The rigorous ordeals for the diploma are two in number. The first is an examination in anatomy, botany, natural history, physiology, general and special pathology of external and internal diseases, semeiology, and general therapeutics. The examiners are the Dean, the President of the Faculty, and the professors of anatomy, botany, natural history, physiology, and pathology.

For the second, the subjects are, chemistry, forensic medicine, ophthalmology,

materia medica, art of prescribing, and clinical practice; and the examiners are the professors of chemistry, forensic medicine, ophthalmology, and materia medica, together with a physician unattached to the faculty. In Vienna, the latter person is the vice-director; and in the provinces, some practising physician, not a professor.

The candidate may answer, as he pleases, either in Latin or in the vernacular.

Having passed these examinations, he is obliged to write a dissertation on a medical subject. He must also add some theses, which he has to defend publicly against three disputants—doctors of medicine or surgery. The Dean, and the President of the Faculty, as well as four professors, must attend the reading of the dissertation, and copies of it are to be distributed to all who may be present: the said dissertation and theses being written and defended in German, if the Dean grant leave; but this is not very usual, nor without some reasonable pretext.

The expenses of these final *rigorous* examinations are—for the first, thirty-five florins, five florins being paid to each examiner; for the second, sixty-three florins, nine florins to each examiner. The fee to the censorship, exercised by each of the professors in turn, is four florins fifty kreutzers; for the admission, &c. sixty-nine florins; to the president of the dissertation, twenty-seven florins: in all, 199 florins (nearly 20*l.*)

If the candidate seek the diploma of doctor of surgery—1, He must be examined in anatomy, chemistry, materia medica, the art of prescribing, forensic medicine, ophthalmology, and the theory and practice of surgery; 2, He must perform two operations on the dead body publicly, and in presence of all the professional men and pupils who choose to be present. Previously to operating, he must give a history of the process which he is about to adopt, describe it, point out the different modes in which it may be performed, distinguish the several advantages and disadvantages of each mode, note the indication and contra-indication, shew how the instruments and bandages are to be employed, &c.: in short, he must act with all the care and attention he would use with the living.

The expenses of these examinations for the surgical diploma are—for the first, seventy-two florins—of which the seven senior examiners receive nine florins each, the junior half that sum; for the second examination, the candidate pays fifty-four florins, nine florins to each examiner. The admission is sixty-nine florins thirty kr.; and the sum total, 195 florins 30 kr. (about 19*l.* 10*s.*)

If a doctor of surgery wish to obtain the degree of doctor of medicine, he must be examined—1, in botany, physiology, natural history, general and special pathology, therapeutics, and semeiology of internal diseases; 2, in practical matters relating to internal medicine. For both these examinations, the dissertation, and the admission fees, &c., the expenses are 114 florins 30 kr. (about 11*l.* 10*s.*)

If a doctor of medicine wish to be admitted to surgery, he must be examined—1, in the theory and practice of surgery; 2, in the public test required of every candidate for the surgical diploma. The expenses are 110 florins (about 11*l.*)

Non catholic candidates are admitted to degrees by dispensation only; but then there is no oath administered at variance with the religious tenets or observances of the parties.

2. ORGANIZATION OF THE PROFESSION.

We have now to give an account of the arrangements of the medical profession throughout the States. The supreme direction of every thing that relates to the general organization of medical affairs, is committed to the Chancellory of the court of Austria. In the provinces, it is entrusted to the provincial officers (*Landesstellen*), who, however, are obliged to have recourse to the Chancellory in all matters of importance. As all kinds of quarantine regulations, and the appointment of *cordons sanitaires*, rest with the Minister of War, the provincial magistracy have chiefly to attend to the epidemics which may visit their districts. They are enjoined to take all necessary measures to stifle epidemics at their birth, or at least to prevent their spread.

In every province of the hereditary states of Austria there is a medical man, charged with the supreme direction of sanitary arrangements. This is the *Landschafts-Proto-Medicus*, who is also a member of the council of state (*Sanitatsrath*), with a deliberative voice in the provincial assemblies.

The director of medical studies in the University of Vienna is also the *Proto-Medicus* of the empire. His circle of activity is therefore, as may be conceived, extremely wide, for it comprehends the whole sanitory organization throughout every part of the Austrian monarchy. This officer is second only to the Chancellor, with whom he maintains close relations,—the latter demanding his advice on all arrangements connected with the public health. The appointment of the *Proto-Medici* of the provinces is in the hands of the Emperor; their salary is usually 1000 florins (about 100*l.* per ann.)

Every provincial government has a medical reporter attached to it, whose duty it

is to attend at the meetings of the magistracy, to vote on all questions as one of that body, and to assist in the periodical statements required at head quarters, touching—1, the health of the local population and of their domestic animals; 2, the hospitals, their management, and the treatment therein adopted; 3, the apothecaries' shops; and 4, the conduct of the medical men who are in the service of government.

The provincial magistrates have the charge of the public health in their respective localities, and to them the district medical officers direct their reports on all such subjects; for example, as the rise and progress of epidemics, &c. On every occasion of adopting any new sanitory arrangement, they are obliged to take the opinions of the medical faculty of the province.

The district medical officers (*Kreis-physiker*) are appointed by the provincial authorities, with the consent of the *Proto-Medicus* of the province; and finally the government sanctions the appointment, if not otherwise advised.

In those towns which possess a university or a lyceum, the *Proto-Medici* are also directors of medical studies, presidents of the faculty, or the College of Physicians. But Vienna is excepted from this arrangement: there the *Proto-Medicus* of Lower Austria only exercises his jurisdiction beyond the capital. Those universities also are excepted which, like that of Pesth, possess at the same time a Director and a *Proto-Medicus*.

One part of the duties of the *Proto-Medici* is to exercise a political censorship on all works and articles in the journals connected with medicine: the authors are obliged to send their manuscripts to these officers previous to publication. Wherever there are both a *Proto-Medicus* and a *Director* in any city or town, it is the latter who acts as censor.

Among the other functions belonging to the *Proto-Medici*, are—1, that of having an eye upon the different orders of practitioners, such as the oculists, dentists, apothecaries, and midwives, throughout the province; and, 2, that of superintending the hospitals, asylums, and prisons. Their qualifications for the post must comprehend an exact knowledge of the nature of the country, its inhabitants, and their habits of life—all with reference to the public health. He must offer suggestions to the government from time to time relative to the means of removing or destroying injurious influences; and his special duties embrace the noticing of every thing connected with ill-judged sites for building, the presence of marshes, bad water, the popular prejudices respecting the physical education of children, &c. He must also see that there is a sufficient supply of clever medical practitioners in each district, and that they be not too far asunder. Quacks, and charlatan practitioners of every sort, male and female, who have not duly qualified themselves by passing the proper ordeals, he is authorized to put down; and he must take care that nobody sell drugs except the regular apothecary, and that the latter offer for sale no emmenagogues, violent medicines, or poisons, unless when applied for through the recipe of a regular physician or surgeon. He has also to inspect the foundling and maternity hospitals.

On the occurrence of an epidemic, he must repair to the place, and take measures with the district practitioners for its subdual; and when it is over, he must draw up a full report of the circumstances of its rise, progress, nature, symptoms, &c. with such pathological and therapeutical observations as seem to be called for. The *pharmaciens*, and their establishments, are under his strict surveillance; with the injunction, that on the proper discharge of this duty, depends the safety of the subject from the pernicious consequences of bad drugs. When obliged to travel in the performance of his functions, he is paid his expenses and an indemnity. At the end of every year he is bound to send in a report to the government of the province, stating the general sanitory history of the annual period just elapsed: to this he adds a list of the births, marriages, and deaths, and of the numbers received into the hospitals, asylums, &c. with returns of the number cured, or who have died. He appends likewise an account of the atmospheric constitution of the year, and of all the phenomena which seem to affect the health of man and domestic animals: besides all the remarkable cases which have connexion with the province of medicine and surgery. All this is founded on the reports of the subordinate medical officers who have charge of the several districts.

The *Proto-Medicus* of a maritime province is by right a member of the sanitory council of that province, if he reside in the district.

The *Proto-Medicus* of Lower Austria has a most extensive range of duties. Among others, he visits once a month, and without previous notice, all the hospitals within his jurisdiction, including the lunatic asylum, &c.; and the results of his examination are transmitted to government. At the end of every year, he appends to his report a list of all the practitioners within his district, with their names, appointments, and the universities where they studied.

With regard to the great body of medi-

cal practitioners, it may be divided into the several classes of the town physicians (*stadtphysicker*), the circle and district physicians and surgeons, the midwives, and the veterinary practitioners, who have been only of late recognized. The arrangement of the profession, which has long subsisted under this monarchy, has been to keep in government-pay a sufficient number of town and circle practitioners. Formerly there were, for example, nine medical men charged with sanitory affairs in Upper Austria, north of the Ens; but latterly there are, instead, a physician and surgeon to every circle, with two district practitioners. In Lower Austria, in like manner, there are in every circle a physician and a surgeon, with four subordinate practitioners, all salaried by government. The Emperor keeps the nomination to the chief places in his own hands, but always pays due attention to the recommendation of the local governments. When the situation of surgeon to a circle is vacant, the chancellory at Vienna is immediately apprized of it; and the first offer of the place is made to those surgeons who have been educated at the Institute of the University of Vienna. It is announced in the Vienna Gazette, that those surgeons who would have the appointment should send in their claims to the chancellory, and not till no surgeon of this class is found forthcoming, is the place offered to others.

The appointments of circle physician or surgeon, are only bestowed on those who have obtained a diploma in midwifery; for, in places distant from the capital, the circle physicians are charged with the examination of the midwives, conjointly with the circle surgeons, who are obliged to give them instructions. Both officers are obliged to shew that they have made a special study of legal medicine, medical police, and veterinary medicine, and that they are familiar with the language of the country.

A preference is generally given, in these appointments, to those military surgeons who have served, and also have shewn themselves experienced in civil practice: and, in every instance, the utmost attention is paid to the diligence, devotedness, and moral conduct of the candidate.

Thoughout the whole of the Austrian states, it is the almost invariable practice to give no appointment, especially of a medical nature, to any one not born in the country, and who have not studied at some national university. When, in fact, a place is vacant, the names of three native graduate candidates are to be submitted to the Emperor.

It is a repeated injunction in the ordinances, never to give the appointment of a physician to any one who has not served many years in a large hospital. Recently a law to that effect has been made; and in order to ensure its observance, it is customary, on the occurrence of a vacancy, to advertise it in the Vienna Gazette for several days previous to the final nomination by the court.

It is a strong recommendation to a candidate, that he shall have contributed articles to the "Medical Annals of Austria:" the titles of these articles must be set forth, and if they relate to epidemic or endemic diseases, to remarkable cases in pathology, to medical topography—or contain suggestions for the preservation or amelioration of the public health—they are the more favourably looked upon. The careful and successful practice of vaccination, *gratis*, on a great number of poor children, is also a passport to preferment.

Residence within their respective circles is strictly enjoined to the *Kreisphysiker*, and they are forbidden, under the penalty of being deprived of their offices, to change their place of abode without due notice of their so doing.

In consequence of a notification to government, that in several of the provincial towns the *Physici* accepted senatorial dignities, and mairies, to the neglect of their other duties, an order has been issued denouncing the practice, and enjoining an undivided attention to their proper functions.

Several appointments, with salaries of 600 florins (60l.) per annum, have been recently made for veterinary practitioners in the German provinces of the empire; and the preference, in selecting the persons to be so endowed, is always given to those who have studied veterinary medicine at Vienna. Their residence is also assigned them by the government*.

ST. BARTHOLOMEW'S HOSPITAL.

Compound Fracture of the Leg—Dangerous Hæmorrhage—Ligature—Amputation.

John Bow, æt. 53, a bricklayer's labourer, was admitted into this hospital on Thursday, October 30th, with a compound and comminuted fracture of the tibia and fibula. The accident occurred in the following manner:—He was climbing up a ladder, when his foot slipped and he fell from a height of six feet, with his right leg under him. At the time of his admis-

* For the above article we are indebted to the *Observateur Medical Belge;* a monthly periodical recently started in Brussels.—E. G.

sion there was much hæmorrhage from the wound; and this continuing, it was thought proper to send for Mr. Earle. When this gentleman arrived, the bleeding was not so profuse; and on examination, he deemed it necessary to remove three portions of the fractured bone. The largest of the pieces taken away was about three inches in length, and in breadth it comprised about one-third of the middle of the tibia. Its upper extremity was sharp and pointed; its sides and lower end were rough; the other pieces were small and irregular in shape. The anterior tibial artery was bare to the extent of an inch, and the posterior tibial could be detected on the introduction of the finger: both pulsated freely, and the pulsation could be likewise detected below the injury. The man, after this day, went on pretty well. Purgatives and enemas were given to remove costiveness; liq. opii sedativus was administered to procure sleep.

On the 2d November, symptoms of pyrexia coming on, the patient was directed to take liq. antim. tart. with saline mixture; and on the 6th, pain of the chest and cough being the subject of complaint, a blister was applied over the sternum. The hæmorrhage continued, but daily diminished in quantity.

On Sunday, the 9th inst. at 11 o'clock A.M. blood was discovered to be rapidly pumping out from the back part of the wound. Luckily a gentleman arrived at this moment, and speedily stopped the hæmorrhage by pressing the femoral artery against the pubis. The man had, however, lost a quart of blood; his pulse was sinking rapidly; a tourniquet was applied, and brandy administered. Mr. Skey having been sent for, arrived in a few minutes, and concluding, from the direction of the wound, &c. that the posterior tibial artery was injured, ordered the man to be removed to the theatre.

Mr. Skey then commenced by enlarging the wound, to the extent of an inch, in a direction upwards and backwards, and then cutting down between the soleus and deep-seated muscles, found the vessels at the back of the wound. Suppuration had taken place extensively in the neighbourhood of the vessels, and had separated them from their connexion with the deep muscles: their relations to each other were likewise altered; the nerve lying internal and anterior to the artery. The tourniquet being loosened, the vessel was seen pouring out its contents; it was secured by a ligature, and, as there was much venous hæmorrhage, a branch of the saphena vein was lightly tied. The pulse being reported small and irregular, and the surface of the body covered with a clammy perspiration, Mr. S. thought it right to have the patient removed. The lower end of the wounded vessel was not tied, and, in expressing his reasons for this omission, Mr. Skey said, that from having seen the inner coat of the upper portion of vessel, he was led to believe that the other end had retracted; that as bleeding had not yet occurred from that extremity, and the force of the circulation was diminished, it was fair to infer that hæmorrhage would not occur from it: he, however, directed the tourniquet to be kept ready, and the patient to be watched during the day and night. Another reason which influenced his decision was, that had he detained the man much longer on the table, unpleasant consequences might have ensued.

November 10th.—The patient passed a tolerable night, and his pulse rose under the effect of stimuli.

11th.—Considerably worse; pulse quick and intermitting; great anxiety and restlessness.

On Wednesday, the 12th, the limb was removed by Mr. Earle; since then the patient has been slowly improving, but is still in a precarious state.

Examination of the Limb.—The ligature was found above a longitudinal fissure; the inferior portion being bound down by lymph, and covered by the nerve, led to the belief of the vessel's not being continuous. The muscle was likewise found divided at the same point as the wound in the artery.

SURGICAL REPORTS FROM THE LONDON DISPENSARY.

By R. R. Robinson, Esq.

Surgeon to that Institution.

Case I. — *Malignant Ulceration of the Hand — Amputation of the Fore-arm — Secondary Hæmorrhage — Return of the Disease in the Stump and on the Scalp.*

Sarah Harris, æt. 55, admitted November 25th. First perceived a small tumor over the index metacarpal bone of the right hand three years and a half ago, attended with a burning pain, which gradually increased in size, and ulcerated. She had it cut out: there was much bleeding after the operation; some vessels were secured by ligature, one of which gave way, and in consequence a large quantity of blood was again lost. About

three weeks after the wound had completely healed, the tumor reappeared, and she again experienced the same burning pain. In August she put herself under the care of a quack, who applied irritating applications, by which the pain and tumor were much increased.

There is now a foul malignant fungous ulcer, with hard and ragged edges, about two inches and a half long, and rather more than one broad, situated over the anterior part of the metacarpal bone of the right index finger, extending towards the thumb, where it is more tender than elsewhere; there is occasionally a little bleeding; the surrounding skin is red and inflamed, the inflammation extending towards the back of the hand; there is excruciating pain (day and night, preventing sleep) in the ulcer, but it does not extend up the arm. There is no affection of the axillary glands or mammæ; the catamenia are now regular, and have been so throughout. Low-spirited; bowels open; pulse regular, but feeble.

Uniform pressure. Solut. Calcis Chlorid. ℥ij.; Aq. Puræ, ℥vi.; Tr. Opii. ℥i. pro lotione; Pulv. Doveri, gr. x. o. n.; Inf. Gent. Co. ℥iss. ter die.

Nov. 27th.—Pain very great, more particularly towards the inside of the thumb, where there seems a small tumor forming; discharge from the ulcer very offensive; pulse 120. The pressure continued, and a solution of opium, ℥j. to a pint, substituted for the lotion.

Dec. 3rd.—Pressure has been regularly applied until to-day; sore much the same in appearance — less offensive — surface sloughing—pain agonizing, always worse at night; seldom obtains sleep.

Omit the pressure. Rep. Pil. et Med.

9th.—The wound continuing sloughing, and the pain very severe, though rather less since the pressure has been removed, by her express desire, and with my friend Mr. Luke's sanction and able assistance, I removed the fore-arm high up, by double flap; several vessels were secured, and the stump dressed with ligatures and strapping. The operation was well born.

10th.—Thirty drops of laudanum were given immediately after the operation, ten in the course of the afternoon, and thirty again at night. Has dozed frequently; skin freely perspires; pulse 108; tongue clean and moist; some oozing from the stump; a slight cough; bowels confined.

M. S. c. Rheo. statim Mist., Salin. quartis horis; Lotio frigida.

11th.—Some sleep from an opiate, but altogether a restless night; a little bleeding; bandage tight. Upon taking off the dressings, there were seen some vesicles and livid spots at the edge of the stump, and numerous coagula in the interior; upon the removal of which a small artery was observed bleeding. Between the bones which was secured by ligature, pieces of lint were inserted into the stump; a strip or two of plaister brought the edges together, and a bread-and-water poultice was applied.

20th.—The stump suppurating well; no further bleeding; all the ligatures have come away; a small ring of the radius and ulna black; less pain. Stump dressed to-day.

Feb. 25th.—The stump has been healed some time, all but a small spot over the ends of the bones, from whence a small piece of bone has already come, and two others are coming away; improved much in health at one time—not so well now; countenance looks haggard and sallow; nights are very restless; she has had a cough and dyspnœa some days, to which she is subject every winter, which has been relieved by blistering, opium, squills, and aloes. A few days ago she perceived a small pimple over the upper part of the left side of the frontal bone, apparently attached to the occipito-frontalis muscle; it is very tender to the touch, particularly since she scratched it, two days ago. Tongue coated and white.

Cat. panis. Tr. Opii. ℥xxx. o. n.; Mist. Cath. p. r. n.

March 9th.—The tubercles on the forehead have spread slowly; there is another close to them, not at present painful. Two small tubercles, that seem disposed to fungate, at the outer side of the stump, which burn at night, but are cooled by goulard wash.

Opii, gr. i.; Scillæ P. gr. i.; Aloes, gr. iij. o. n.

23rd.—Pain has been very great, particularly in the stump; looks more haggard and sallow; orthopnœa, a sensation as if a load was attached to the lungs, preventing her from raising them; cough continues; the places on the forehead and stump much the same; pain, apparently of a rheumatic character, down the left side of the face and neck; has taken colchicum, without relief; tongue white, moist; pulse feeble, quick, and irritable; bowels open.

Lin. Volatile Opiat.; Quin. Sulph. gr. i.; Ext. Conii, gr. x. ter die.

April 5th.—Weaker; more sallow; breathing short and wheezing; much

expectoration; is reported to have brought up some black and green fluid, with some blood, a few days ago; the tubercles about the forehead and stump on the increase; no rest without thirty drops of laudanum at bed-time; pulse 104; tongue moist.

11th.—She was seized with pain at the epigastrium, nausea, and distention of the abdomen; the dyspnœa increased; she was light-headed; had lividity of countenance, lips, and nails; and died this day.

I could not obtain permission to examine either the stump or the body. The hand is in my possession; I have injected it with size and vermillion. The tumor seems to originate from the thecа of the flexor tendon: at its base it is hard, and apparently scirrhous; above, it possesses the characters of the medullary fungus; it is softening in the centre, where it is of a red colour—elsewhere it is brown; there are no vessels observable in the tumor, though a branch well filled runs by the side of it.

Remarks. — The reappearance of the disease in the cicatrix three weeks after the healing of the wound, its appearance in the scalp, and *subsequently* in the stump after amputation, and the sallow, haggard appearance of the countenance, show that in this case the constitution was much affected, if the disease was not of constitutional origin. I very much regret I could not obtain a post-mortem examination, for I think this patient died chiefly from disease of the lungs; but whether the pulmonary affection was malignant, or simply chronic bronchitis, or both, is not clear. The sense of a load attached to the lungs, which prevented her raising them, (to use her own words), the appearance of tubercles in the wound, the stump, and the scalp, would induce the suspicion that malignant tubercles might have been deposited in the lungs also; more especially as it is not uncommon to find such deposition in malignant diseases: on the contrary, the absence of dulness at any particular part of the thorax, the apparent patency of the pulmonary tissue at most points, and the decided wheezing throughout, are more in favour of the existence of bronchitis, and *no* other pulmonary affection.

This is a case where the chances were against a successful result, and therefore no one would, I think, have *proposed* amputation; but when the patient, from extreme suffering, urged its performance, I considered myself justified in complying. I think it very *doubtful* whether she would have existed four months without the operation; and it is *certain* that she had, during a great part of that time, more ease than she had for a long time previously experienced.

It is further worthy of notice, that secondary hæmorrhage followed both operations to which she submitted.

Case II.—*Malignant Ulceration (?) of the Right Groin—Fatal Hæmorrhage.*

Mary Glyn, æt. 60, a thin, emaciated, sallow woman, admitted September 12th, perceived a small pimple over the symphysis pubis, many months ago, which she neglected. It has since spread considerably; there is now an ulcer extending from the symphysis throughout the right groin to the anterior superior spinous process of the right ilium; the ulcer, in appearance, is much like some forms of chimney-sweepers' cancer (she has not, however, been in the way of soot): the edges are irregular, hard, thick, and everted; in the centre the ulceration is very deep, and covered by a thin yellow slough-like looking substance. Pain excruciating; no rest; no appetite; pulse feeble and quick; tongue clean; great prostration of strength.

Ol. Ricini, ℥i.; Ung. Opii. (she refused to poultice the ulcer); Inf. Gent. Co. ℥iss. M. S. 3i. ter die.

Sept. 16th.—Ulcer cleaner—it suppurates freely; pain considerable; excavation does not look quite so deep. Having no person to take care of her, and being destitute of the necessaries of life, I advised her to go to a hospital, but she obstinately refused.

Rep. Ung. et Mist.

17th.—Last evening she suddenly felt wet, looked down, and found herself deluged with blood, which her daughter says was of dark colour, and came out in a stream, with great rapidity, in a quantity more than sufficient to fill two wash-hand basins; in five minutes she was a corpse. A post-mortem examination of the body was refused; but I carefully examined the wound, when I found the superficial fascia and portions of the fascia latra destroyed, as well as the vena saphena major. I think that the ulceration had also destroyed a portion of the right femoral artery and vein, as neither of these were discoverable; but in the place where they should be, there was an irregularly ulcerated cavity, of chocolate colour, extending some way towards the spine of the ilium, in which was some chocolate coloured fluid, more like that which comes from a softened medullary fungus, than actual venous blood.

Remarks.—I very much regret that I could not obtain a post-mortem examina-

tion here, as I think it would have been both interesting and important.

The feature of most interest in the case, was the sudden and fatal hæmorrhage—an occurrence, as far as I can see, unavoidable; for it did not appear to me justifiable to apply a ligature upon the artery above the ulcer before any bleeding occurred, for the following reasons:—

1st, Because, in many instances of extensive ulcers over large vessels, they have not been involved, and no hæmorrhage has ensued.

2dly, Because, in some cases of this description, the vessels have been found obliterated at these parts.

3dly, Because the disease, having the appearance of a malignant one, it would in all probability have soon proved fatal, had the operation been successfully performed, and no bleeding ensued.

4thly, Because the ulcer, being placed over the femoral artery and vein, might have perforated the latter and not the former; and then an extensive and perhaps fatal hæmorrhage would have supervened, notwithstanding the operation. When the bleeding did occur, the blood was so rapidly and so largely poured out, and the artery and vein appeared so much diseased, that surgical aid (even had she gone, as I wished her, into the hospital), would, I apprehend, have been in vain.

Case III.—*Malignant Ulceration of the Neck of the Uterus—Communication between the Bladder and Vagina.*

Mary Clark, æt. 42, admitted March 16th. The mother of nine children; the youngest 6½ years old. All her labours natural. In June last she experienced, for the first time, sharp pains down the inside of both thighs, which lasted six hours, and then removed towards the anus, where they remained for the same length of time, and then for six hours were seated in the vagina: the remaining six hours out of the twenty-four she was easy. This state has continued daily, with now and then an interval of two or three days, ever since. About the time that she first felt the pain, the catamenia came on excessively, and lasted for a fortnight. They have since returned, in greater or less degree, weekly. Sometimes they are very deeply tinged with blood, at others they are pale. She is always easiest at this period. Upon examination through the vagina, the os uteri was found to be hard, ulcerated, and occupied with a cauliflower-like excrescence, the discharge from which is of a red colour, and free from fœtor. Fallen away for the last four months—the two last rapidly. She is now exceedingly reduced; features very much shrunk; countenance sallow; appetite gone; bowels open.

Solut. Calcis. Chrolid. Tr. Opii, aa. ℥x. ter die.

May 17th.—Continued the mixture a month without any alteration; more feeble, thin and sallow; pains at times shooting and severe. From constant straining, piles were produced a week ago. A constant bloody discharge from the vagina, with some clots.

Omittatur Mist. Pulv. Opii, gr. ij. o. n.

June 7th.—The opium constipating the bowels, hyoscyamus was substituted for it; but it griped and irritated the bowels so much that the liq. opii sedativ. was substituted for that: this agreed well; the pains subsided under its use, and she seemed much better until a week ago, when she was frightened by a boy falling out of a window, since which she has had more darting pains about the pubes, rectum, and back; more bloody discharge from the ulcer, which, to the touch, is much the same; more bearing down, and more difficulty in making water. Countenance is more leaden; pulse small, soft, and feeble; but the tongue remarkably clean and moist.

Repetatur Pulv. Opii.

18th.—Less darting pains in vagina; less discharge; suffers much from flying pains in the upper, and also in the lower extremities.

September 13th.—Has sunk greatly the last few days; cannot sit up; the legs swell; less pain in the vagina; some clots of blood weekly discharged from there; sometimes slight retention, at others involuntary discharge, of urine.

Ol. Ricini. Rep. Pulv.

15th.—Urine was retained till this morning, producing great distress, when she had a copious discharge from the bowels, with hard lumps, soon after which a large flow of urine took place, and she is now wonderfully relieved.

Repetantur Pil. et Ol.

21st.—Quite easy; has not passed urine, and she distinctly states that she has had no involuntary flow. Intestines tympanitic.

24th.—No urine passed since last report. She was exhausted, and died this morning.

Dissection.—Complexion and skin generally sallow; no fat under the integuments; some ounces of serous fluid in each side of the thorax; lungs unadherent, œdematous, particularly posteriorly; heart healthy. A considerable quantity of serum in the abdomen; a great part of

the peritoneal coat of the liver thickened, puckered, and cartilaginous; stomach large, and greatly distended with gas, as were also the small intestines and transverse colon; the structure of these viscera healthy; mucous membrane of the rectum slightly thickened, and of a deep red colour—in some parts almost black, free from ulceration. The uterus was puckered about the neck, which was the seat of a medullary ulcerated fungus, involving and destroying the surrounding parts. Several portions of fungus, some of white, others of deep-red colour, sprung from the vagina, the neck of the uterus, and under surface of the bladder, of the consistence of brain, softening under pressure between the finger and thumb. The ulceration had extended completely through the neck of the uterus, so that the reflection of the peritoneal coat was all that prevented the body of the uterus from being completely separated from the cervix during life; this was so softened by the disease, that the slightest touch made a rent in it. The body of the uterus was striated, hard, and apparently scirrhus; in its interior there was a layer of a yellow substance resembling fibrine. The lateral ligaments of the uterus were of cartilaginous hardness; the ovaries small, and of deep purple colour.

Bladder empty: on opening it, the orifice of the urethra was of a highly red colour, from increased vascularity: upon cutting it open entirely, it was found to have a very extensive communication with the vagina, having been implicated in the ulceration above described.

Lumbar glands unaffected.

Remarks.—This case is important, as bearing upon the question of exeising the neck of the uterus in cases of malignant disease; and proves the necessity of operating early, if we operate at all, as the ulceration here had extended into the bladder, and extensively destroyed its parietes. This extension of the disease appears no uncommon circumstance, for I have in my possession two other preparations illustrative of it.

It is most probable that the existence of this communication might be ascertained by passing a catheter into the bladder, and examining with the finger per vaginam; though I am not certain that this method might not deceive: if the catheter is touched by the finger so introduced, then the communication would be obvious; but if it is not, it is not so obvious that no communication exists, for the extension and irregular growth of the fungus might sometimes have a valvular effect, and sometimes not; and thus I would explain the circumstance of there being at one time incontinence, at another retention of urine.

If the woman's account of her sufferings can be relied upon (and she was very clear in what she stated), there was little or no urine secreted for nine days prior to dissolution, and the pain shifted, at the commencement of her illness, no less than *three times in every twenty four hours, lasting exactly six hours in one part.*

It is also worthy of note, that, with such extensive malignant disease of the uterus, the lumbar glands were unaffected.

With these cases I shall conclude my Surgical Reports, as I fear I have already trespassed too much on the pages of this journal. When it is stated that the preceding cases, with very few exceptions, occurred within a period of twelve months—viz. from October 1832, to October 1833—it will, I think, be admitted that Dispensary practice is capable of furnishing instruction to pupils, and facts worthy of a place among the records of our profession.

STATISTICAL SOCIETY.

Monday, Nov. 17, 1834.

The Marquis of Lansdowne, President, in the Chair.

The Society held its first ordinary meeting for the season on Monday evening, when about 150 of the Fellows attended. The business commenced by reading over the names of all those who were elected Fellows since the anniversary meeting, as well as a considerable list of donors who have presented books, maps, &c. to the Society.

An account of the proceedings of the Statistical Section of the British Association, lately assembled at Edinburgh, by Mr. Maclean, was read by his brother secretary, Mr. Woronzow Greig; after which a paper by the latter gentleman was communicated to the Society, and excited much interest. It related to the *character and condition of the Irish labourer.* Mr. Greig made a tour through the sister country last autumn, for the express purpose of ascertaining the actual state of the peasantry and of agricultural labour. His account of both is very unfavourable: he estimates at a very low rate the amount of labour produced, or capable of being produced, by the common Irish operative the fact he attributes to the habits of indolence of the natives, and their contentedness with a most meagre and insufficient diet. Their love for ardent spirits, too-

to which they are most deplorably addicted in the absence of any more wholesome stimulant—is ruinous both to their health, strength, and prospects.

The last communication read to the meeting, was an interesting account of the state of the savings banks of Exeter and Devon.

Among the Fellows who were present, we noticed Mr. Malthus, Mr. Hallam, and several other distinguished persons.

PAUPERS AND PARISH SURGEONS.

NOTE FROM MR. HOOPER.

To the Editor of the Medical Gazette.

SIR,

PRESUMING the observations in the last two numbers of your Gazette, upon the want of promptitude in parish surgeons, relate to the case of a child who was burnt to death in my parish, and consequently under my care, I feel myself called upon to correct the very erroneous statements there put forth, although you have done me the justice to acquit me of all blame in the case. The newspaper report of the coroner's inquest was an exaggerated statement of the facts, because I suppose the reporter thought the truth too insipid to answer his purpose; but even that report would not warrant your assertions, that "a poor child was lost for want of timely medical assistance," and that "some hours were lost before a little liniment could be procured for the burnt sufferer through the necessary order, and several more elapsed before the surgeon could attend in person; but when he did arrive, it was too late—the patient was dead!"—No. 363, p. 241.

Now, sir, if you will take the trouble to *refer to the coroner's notes*, you will find that three of the most respectable witnesses swore that my assistant attended immediately after the accident, and sent medicines as soon as he returned home from visiting it; which did not exceed six minutes; that no order was asked for, or required, by me or any of my establishment; that I attended the child twice the same day; that she was subsequently attended by another surgeon, at the request of her friends; and that she *lived three days after the accident!* I do not believe, sir, that these inaccuracies were published intentionally; at the same time I feel that due caution has not been observed by you, in promulgating such reports without good authority, and as they are calculated to injure my character, I trust you will do me the justice to insert this letter in your next number.—I am, sir,

Your obedient servant,

R. L. HOOPER.

London Road, Southwark,
Nov. 18, 1834.

[As Mr. Hooper has thought fit to come forward and connect his name with the transaction to which we alluded, we have only to regret that he did not shew an equal zeal in correcting the misstatements of the newspapers. We had no access to the "coroner's notes," but were simply indebted to the public prints for our information. One word more: if Mr. H. had read our remarks, with but a common understanding of them, he would not have fallen into the gross mistake of supposing that we complained of any "want of promptitude in parish surgeons;" much less that we had the most remote intention of "injuring his character."—ED. GAZ.]

SATURNINE AMAUROSIS.

IN a memoir on this subject recently published by M. Duplay, of the Hôpital de la Pitié, attention is directed to the following propositions:—

1st. Amaurosis, succeeding to colic from lead, or to the nervous colic that approaches it, presents this characteristic, viz., that it shews itself suddenly; in some hours the patient completely loses the power of vision, and can no longer distinguish the light.

2nd. It commonly makes its appearance after several attacks of colic; yet it may supervene on the first attack, as well as many other lesions of innervation in some individuals affected with lead colic.

3rd. Most commonly the disease is announced by the following symptoms; cramps; pains in the arms; some paralysis of the wrist; epileptiform fits and delirium: occasionally, on the contrary, it comes on suddenly, and it is only after some time the other symptoms make their appearance.

4th. The duration of this form of amaurosis is commonly short; some hours to one or two months; the mean term is five or six days: in one single case from lead colic it had resisted all the means employed. It has shewn the same tenacity in another case, observed by Felix Plater, in which the amaurosis coincided with an hysterical colic. Stoll says, that amaurosis from lead, or hysterical colic, is temporary, and disappears on the cessation of the paroxysm.

5th. The same treatment as for lead colic generally dissipates the amaurosis: in one case, large bleedings were inefficient,

and purgatives have removed it in another, where it was complicated with nervous colic and constipation.—*Archives Generales, and Dublin Journal.*

PINEAL GLAND.

M. Wurzer, the venerable professor at Marburg, has recently analysed the gritty matter found in the pineal gland, and has ascertained it to consist of carbonate of lime, phosphate of lime, iron, and manganese. Fourcroy and Vauquelin could never obtain from it more than phosphate of lime and animal matter; but M. Wurzer, having frequently repeated his analysis, is positive as to the results.—*L'Observateur Medical Belge.*

ANATOMICAL DIFFICULTIES OF THE SEASON.

Owing to the absurd prejudices which still exist among many of our parish functionaries, much difficulty has been felt in procuring any thing like a compliance with the ninth section of the anatomy act this season. There is said to be no considerable mortality just now; but such as there is, perhaps might afford a reasonable supply to the schools, were there no obstacles thrown in the way by certain ill-judging overseers and ultra-humane vestrymen. A communication from Lord Duncannon, to the parish of St. Mary, Whitechapel, exhorting the authorities in that quarter to second the exertions of the Inspector of Anatomy, was reluctantly listened to on Thursday, and a tardy consent given to attend to his Lordship's suggestions.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO RECEIVED CERTIFICATES ON THURSDAY, NOV. 20, 1834.

Isaac Byerley, Liverpool.
George Varah, Sheffield.
Frederick James Chapple, Stonehouse, Devon.
Charles Redwood Vachell, Cardiff.
James Berry, Bristol.
James Newton Heale, Bristol.
Jabez Carr, Birmingham.
William Jones, Birmingham.
James Taylor, Birmingham.

NEW MEDICAL WORKS.

A Treatise on the Nature of Cholera, by S. Brougham. Post 8vo. 5s. 6d. cloth.

Elements of Chemistry, by E. Turner. Fifth edition, 8vo. 21s. bds.

The Principles of Ophthalmic Surgery, by John Walker, of Manchester. 12mo. 5s. 6d. cloth.

Good's Study of Medicine, fourth edition, by Samuel Cooper. 4 vols. 8vo. 3l. 3s. bds.

Popular View of Homœopathy, by the Rev. Thomas Everest. 18mo. 3s. 6d. bds.

Treatise on the Diseases of the Eye, by William Mackenzie. Second edition, 8vo. 25s. bds.

Sir A. Cooper's Lectures on Surgery. 18mo. Fourth edition, 6s. 6d. bds.

The Medical Pocket-Book, 1835. 3s. cloth, 5s. tuck.

Mr. Curtis has in the press a new edition of his Treatise on the Physiology and Diseases of the Eye.

WEEKLY ACCOUNT OF BURIALS,

From Bills of Mortality, *Nov.* 18, 1834.

Abscess	2	Hooping-Cough	10
Age and Debility	39	Inflammation	19
Apoplexy	8	Bowels & Stomach	6
Asthma	12	Brain	2
Cancer	4	Lungs and Pleura	7
Childbirth	6	Insanity	2
Cholera	2	Liver, diseased	7
Consumption	64	Measles	15
Convulsions	25	Miscarriage	2
Croup	3	Mortification	6
Dentition or Teething	6	Paralysis	1
Diarrhœa	1	Rheumatism	1
Dropsy	12	Small-Pox	8
Dropsy on the Brain	13	Sore Throat and Quinsey	1
Dropsy on the Chest	1	Spasms	1
Fever	13	Unknown Causes	4
Fever, Scarlet	14		
Fever, Typhus	1	Stillborn	12
Gout	1		
Heart, diseased	1		

Increase of Burials, as compared with the preceding week . . . 17

METEOROLOGICAL JOURNAL.

Nov. 1834.	Thermometer.	Barometer.
Thursday . 13	from 34 to 46	30·19 to 30·25
Friday . . 14	30 48	30·30 30·33
Saturday . 15	35 48	30·30 30·23
Sunday . . 16	31 46	30·17 30·14
Monday . . 17	37 51	30 07 30·03
Tuesday . . 18	36 51	30 02 30·05
Wednesday 19	30 44	30·09 30·13

Wind variable, N.W. prevailing.
The afternoon of the 15th and the 16th, cloudy; otherwise generally clear.

NOTICES.

"J. G." on the treatment of Jaundice is neither original, nor sufficiently practical for us.

We can make nothing of the paper on Epilepsy, by L. H.: it reminds us of some of the quack advertisements which are but too often to be met with in the newspapers.

"A Parishioner of St. Pancras" is requested to look into some of our back numbers, and see if we have not already done justice to the *excellent and charitable* institution alluded to.

"A Professional Man" (Hull) will have perceived ere this time that he did us injustice:—the second part of his letter is unintelligible to us.

W. Wilson, Printer, 57, Skinner-Street, London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, NOVEMBER 29, 1834.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture IX.

DISEASES OF THE AERIAN PASSAGES.

CROUP.

So far, gentlemen, under the name of catarrh, we have spoken of the inflammations of the aerian mucous membrane, which have for their results the secretion of a fluid which remains in the liquid state. We now proceed to the description of another species of inflammation, which also has for its result a fluid secretion, but this secretion almost instantly concretes, and forms a false membrane, lining the affected parts of the air-tubes. This is called *Plastic Inflammation*, or, more commonly, *Croup.*

History.—The nature of this disease seems to have been unknown to the ancients. In all probability, however, it existed in their times, but as most of its signs are common to other pulmonary affections, especially catarrhs, and as morbid anatomy was then totally unknown, it is very possible that its special nature was either overlooked or misunderstood. The first author who mentions or throws any light on the subject, seems to have been Baillou, or, as he is often called, Ballonius—the French Hippocrates: he described something similar to it in the year 1576. Tulpius, Morgagni, and others, had some notion of the disease, inasmuch as they mention excretions of *polypi.* Some thought the mucous membrane itself was thrown up, and others that the blood-vessels of the lungs were separated and expectorated. Ghisi, of Cremona, in 1740, first described the true character of the affection, and after him many authors took up the subject, more particularly Dr. Home, of Edinburgh; finally, Bretonneau, of Tours, has given the most complete account of Croup, under the name of "*Diphtherite.*"

Morbid Anatomy.—Croup consists in an inflammation of the mucous membrane of the aerian passages, having for its consequence a secretion which concretes almost as soon as it forms. I present you specimens of these concretions before I proceed farther. [Four beautiful specimens of the disease were then exhibited.]

When you elevate the concretion or false membrane, you will perceive that the mucous surface beneath is reddened and swollen, but rarely to the degree we find in catarrhs; we must therefore conclude that the pseudo-membrane is not caused by a greater intensity, but that it rather depends upon some specific nature, of the inflammation. It has been supposed that catarrhs result from inflammation of the secreting follicles of the mucous membrane, and croup of the capillary arteries of its tissue. This opinion is plausible and probably correct, but it has not yet been proved.

The false membrane lines and moulds itself to the part inflamed, and extends no farther; its thickness is from half a line to a line, and is generally greatest at its upper extremity; its colour is white, or whity-brown; it has the consistence of boiled white of egg, and its firmness is always greatest where it is thickest. As it descends into the trachea it becomes thinner and softer, terminating in mere mucus. The secretion constantly forming from the inflamed parts, separates the false membrane from the mucous surfaces, particularly at its inferior and soft extremity, and

then, white shreds are often expectorated; the new secretion concreting in its turn.

The disease may attack any part of the aerian passages, as has been distinctly shewn by Bretonneau; thus it may affect the cavities of the nose, the pharynx and mouth, the epiglottis, larynx, trachea, and the bronchial tubes; nay, the pseudo-membranes have been observed in the œsophagus, stomach, and intestines: with the exception of the nares, I have seen it in all these parts.

Croup attacks the larynx most frequently: Laennec observes that it rarely extends above the glottis; but, gentlemen, nearly every preparation before you, and there are six, presents the false membrane, also on the inner surface of the epiglottis; there can be no question, however, but that the disease is usually confined to the larynx and epiglottis, and the adventitious formation then takes the characters I have already described.

But when the croupal membrane extends into the bronchial tubes, it then becomes modified in its appearance; it generally is formed into a single cylinder, as Bretonneau has shewn us in this plate [shewing it], and occasionally into a series of tubes inclosed within each other in the closest contact, and forming altogether a solid body of a thick and tolerably firm structure, and of the exact form of the tube from whence it has been abstracted: upon making a transverse section of this polypiform substance, its concentric laminæ are very apparent. It adheres but slightly to the mucous surface, and may easily after death be drawn out entire. This structure was, I believe, first described by Dr. Withering. The specimen I now present to you, shews a complete mould of a large bronchial tube, and its minutest ramifications. You perceive also the concentric laminæ upon its section.

The croupal membrane has never been seen to consist of these distinct layers in the larynx and trachea, but in the bronchi only; the reason of this seems to me obvious. When the larynx and glottis are affected, the passage of the air is so obstructed that the disease soon terminates either fatally or otherwise, and before a second membrane has time to form and envelop the first. When also a cough takes place, the column of air ascending the trachea is of sufficient volume, and is projected with adequate force to tear away the loosened membrane, and occasion its expectoration: if, however, the formation takes place in a bronchial tube, even of large calibre, the danger is less imminent, the column of air passing through that tube during a cough is of less volume; and, finally, as the vessel fills with the concretion, no air passes at all, so that there is sufficient time and repose for the pseudo-membranes successively to form and surround each other.

Bretonneau was the first to demonstrate that the state of the fauces, which is known under the names of angina gangrenosa, cynanche maligna, or gangrenous sore throat, depended, in the greater number of cases, upon plastic inflammation, and that the supposed gangrenous slough was nothing more than adventitious membrane. He proved this, by shewing that there was no loss of parts upon recovery, which there would have been, had there existed previous gangrene; by the disease descending into the larynx, and producing all the symptoms of croup; and, finally, by repeated dissections, showing the continuity of the membrane.

When the disease attacks the fauces, small yellowish grey spots appear, surrounded by the mucous membrane, highly and darkly reddened: these spots enlarge, coalesce, and form a continuous false membrane of the colour and consistence of the buffy coat of the blood, lining the throat, more or less, completely. I have seen it cover the posterior half of the tongue, so that its anterior part might be elevated by a probe in a membranous form: it rarely passes into the œsophagus, but frequently into the larynx, and suffocates the patient.

If this form of the disease terminates favourably, the false membrane then detaches itself; it is replaced by a thinner and less plastic exudation, altogether similar to catarrhal mucus. Sometimes the membrane does not separate, but appears to be gradually absorbed, becomes then less opaque and sufficiently transparent for the colour of the mucus membrane to be seen through it; finally, it entirely disappears. In the worst cases, the pseudo-membrane is soft and friable, like soft cheese.

It may be observed here, that the croupal membrane almost always originates in the larynx in children, and does not spread into the fauces, and is not accompanied by symptoms of gangrene; while, in adults, it commences in the fauces, and passes from thence into the larynx, and the symptoms then frequently are similar to those of gangrene.

The observations of Bretonneau would lead to the supposition that gangrene of the fauces never occurred, but there can be no doubt it occasionally happens, although much more rarely than the plastic inflammation; it is very probable that a combination of the two affections may occasionally take place, that is, a false membrane may form over a gangrenous surface. [Drawings and a preparation of a false membrane on the fauces were now shewn.]

Symptoms—Functional.—When croup at-

tacks the larynx and trachea, the functional signs must have relation to the respiration and the voice.

The respiration is always impeded in proportion to the quantity of false membrane, by which the tube is rendered narrower, and consequently the column of air of less diameter. The edges of the circumference of the inferior extremity of the adventitious deposit being loose, mucous, and soft, frequently adhere to each other, so as to close up the tube, and require a strong effort of inspiration to overcome the temporary obstruction: I have seen a slight film of pseudo-membrane traversing the upper part of the larynx, suffocate an infant almost instantly. The dyspnœa becomes always great when the concretion separates, and if it be not quickly expectorated often destroys the patient immediately.

The disease usually commences with the symptoms of common catarrh, soon to be followed by a violent cough, which rapidly assumes the croupal character: this cough is occasioned by the irritation of the false membrane, and may be considered as an effort of nature to expel it, which is occasionally effected in the form of small whitish shreds.

The acts of inspiration, and of coughing, produce peculiar sounds; it seems as if the noises were formed and resounded in a brazen tube, having some analogy to the crowing of a cock. The voice, too, has a similar character: these sounds have been denominated, croupal inspiration, croupal cough, croupal voice.

If the disease attacks the bronchial tubes alone, and not the trachea and larynx (which is I believe a very rare occurrence), the dyspnœa will be in proportion to the size and number of tubes affected; the croupal voice, inspiration, and cough, will no longer be present, and the expectoration of the false membrane is the only means of distingnishing the disease. I have seen two instances in adults, where, after violent coughing, pieces of false membrane of the form of the bronchial tubes were expectorated, being no doubt the polypi or bronchial vessels of the ancient authors.

When croup affects primarily the fauces, the act of deglutition becomes difficult, and there will not be present either dyspnœa, cough, or the croupal sounds; but when it progresses and descends into the rima glottidis and larynx, then all the before-described symptoms will be superadded.

Local Signs.—These signs have not been sufficiently studied when croup exists in the larynx, trachea, or bronchi. The appearances I have described under the head of Morbid Anatomy, afford sufficient local indications when the disease attacks the fauces.

General Signs.—Croup is always accompanied by general disturbance of the functions of the body: in most cases the inflammatory sympathetic fever is acute and intense, and frequently combined with irregularities in the movements of the heart. In some instances, particularly in hospitals, or under the influence of certain epidemics, the general signs assume an asthenic character: thus, the pulse diminishes in frequency, and becomes exceedingly feeble, the skin of a dirty or earthy aspect, the breath fœtid, even when no gangrenous points are seen in the throat, and the prostration of the strength of the patient is extreme.

Causes.—Individual.—Croup by far most commonly attacks infants, but it sometimes occurs in adults, particularly when it commences in the fauces.

External.—It often appears as an epidemic, especially in places exposed to the north and north-east winds, particularly when they blow with violence, and for a long time. Laënnec suspected, from seeing the plastic membrane forming in different and remote parts of the body at the same time, that the disease depended upon some peculiar state of the fluids rather than of the solids. The asthenic form of croup occurs most frequently in hospitals. The question of its contagious nature is not so decided as to render it prudent to allow persons to expose themselves unnecessarily to the breath of croupal patients.

Diagnosis.—It is sometimes difficult to distinguish this disease from acute laryngitis, particularly in children: but croup rarely attacks adults, and on the contrary children seldom labour under acute laryngitis.

You have no diagnostic mark even in the sounds of the cough or respiration, for sometimes they are but slightly formed, and frequently they are very like those produced in whooping-cough. The only pathognomonic sign is the expectoration of shreds of the false membrane.

Treatment.—Our indications of treatment are, to destroy the inflammatory action, and to cause the expulsion of the false membrane.

You will recollect, gentlemen, I have already observed that croup must not be regarded as an inflammation of a violent, but of a peculiar, nature; for the redness of the mucous membrane is usually less considerable than in ordinary catarrhs: you must consider, too, that the formation of the croupal membrane is probably an effort of nature to terminate the inflammation by such a secretion, as pus is the termination of that state when occurring in the subcutaneous cellular, and in other tissues; so that we have rather to contend here with its effects than with the

causes producing them. It is true that, although we may be certain that the false membrane exists, we cannot be sure that the inflammation producing it has subsided, consequently it will be prudent to bleed or apply leeches in proportion to the strength of the sufferer; but these means must not be carried to any considerable extent, as experience has distinctly shewn. The usual antiphlogistic remedies may also be used.

Mercury, however, yields to no other medicament in its powerful effect in subduing this disease: calomel should be given freely in doses of one, two, or three grains, every hour or two, until the mouth be affected, the breath fœtid, or the patient relieved; I say until the patient be relieved, because you will sometimes see in practice, that the disease will be subdued before the gums are rendered tender; and under such circumstances it is unnecessary to continue the remedy: if it should happen that the bowels are irritated by the calomel, then the hyd. c. cretâ may be substituted, or, what is far better, the free inunction of the unguentum hydrargyri.

Various derivates have also been employed with the view of subduing inflammation, as blisters, sinapisms, rubefacients of different kinds. All these act probably in the same way, by producing counter-irritation, although Laennec imagined that a cataplasm, sprinkled with muriatic acid, and applied to the throat, would tend specifically to separate the false membrane; that muriatic acid, applied to the surface of the false membrane in the fauces, will tend to destroy it, there can be no doubt, but that it will so act through the skin, is very problematical. Warm baths are very much used in this country, and often with advantage.

To effect the expulsion of the concretions, emetics have been given once or even twice a day for some time, and often with complete success: hydro sulphuret of potash was formerly much used, from its supposed solvent quality, but its action is so slow that it has fallen totally into disuse.

Topical remedies of course cannot be used when the disease exists in the larynx, trachea, or bronchi; but I can speak from experience, that they are of great utility when it attacks the fauces, and I think its further progress is stopped by their prompt use. Various means of this kind have been adopted,—as alum, or the famous remedy of Van Swieten, which consisted of three parts of honey and one of muriatic acid: you will find one of the best, to be a solution of lunar caustic, in the proportion of six or eight grains to an ounce of distilled water; this may be applied by means of a little mop, made of a small piece of sponge or linen, fixed to the extremity of a piece of wood: use it two or three times a day, and, if possible, touch all the parts of the false membrane in sight freely.

If the danger be extreme, bronchotomy may be resorted to, by way of acting up to the maxim, that "*Anceps remedium melius quam nullum:*" but you must not promise yourselves much success from that operation, for it is impossible to determine previously, whether the false membrane has not descended below the point at which you would puncture the trachea: if this has been the case, then you would only add to the danger and distress of the patient. Bretonneau performed it with success on a child of four years of age, the daughter of the Comte de Puységur. Bronchotomy has been repeated in this country in croup, but with little success.

Ulcerous Inflammation of the Mucous Membrane.—I shall defer the consideration of ulcerous inflammation until I describe Tubercular Phthisis, as it is an affection intimately connected with that subject.

DILATATION OF THE BRONCHIAL TUBES.

We now pass on to the consideration of the dilatation of the bronchial tubes.

History.—This morbid condition of the bronchial tubes was not known until it was described by Laennec, although it occurs frequently. The reason it was not previously discovered is very evident. When we examine a lung, we rarely open the trachea, and trace its ramifications; but we generally cut the viscus across, and it is then impossible to distinguish whether a tube is dilated, or of the normal diameter. You should open the trachea, and follow its branches, and if after a branch passes on to a certain distance, its diameter becomes greater, you may then consider it morbidly dilated.

Morbid Anatomy.—Dilatation of the bronchial tubes takes place in a variety of forms: it co-exists invariably with chronic mucous catarrh. A bronchial tube, that in its natural state would scarcely admit a crow's quill, will increase in diameter to the size of the finger. A tube may continue to a certain extent of its natural size, it may then dilate, and afterwards re-assume its proper dimensions: this is a common form to meet with. There may be a succession of dilatations and contractions along the same tube; sometimes the dilatation terminates in an irregular cul de sac, in which a number of small bronchial tubes open; in other cases, the bronchial tubes lose their form, and present a cavity capable of receiving a cherry or almond stone. Often many contiguous branches are unequally dilated, particularly in the upper lobes of the lungs, and form, by their communications,

sinuses full of puriform mucus, giving the appearance of a multilocular tubercular excavation. The extent of this disease varies considerably; it may occur in a single tube, in many, or even in them all.

The parieties of these dilated tubes also vary: they may be hypertrophied or atrophied. In the first case, the mucous membrane is most commonly from a third to a quarter of a line in thickness, softer than natural, and of a violet red colour; the sub-mucous cellular tissue is white, very firm, and of a fibrous texture; the cartilaginous rings are occasionally seen to enter into the substance of the parietes. In the second case, the dilated bronchi are of extreme tenuity, so that no remains of their primitive organization are apparent; they are then a little firmer than the healthy mucous membrane, red, and of a smooth internal surface: their tenuity becomes so great that they may be compared to the pellicle of an onion. The whole of the bronchial tubes of a lung have never been seen dilated in this manner, and the largest Laennec saw, would not have contained more than a nut, and it consisted of a number of bronchial tubes irregularly dilated, juxta-posed, and communicating with each other.

These dilatations almost always occur in the upper lobes of the lungs, and towards their anterior edge: ordinarily a few branches are only affected, but sometimes all those of one lobe; then the dilatations are greater in the small ramifications than in the branches from which they arise, and greater in the branches than in the trunks from which they originate. The pulmonary structure which exists between these dilatations is almost always condensed, and no longer permeable to the air.

Causes. — Dilatation of the bronchial tubes rarely occurs, except in individuals attacked by chronic mucous catarrhs. It depends, doubtless, upon the prolonged stay of sputa in the bronchi, by which these vessels become gradually dilated. The bronchial ramifications, which enter into a tubercular excavation, are also occasionally dilated, and remain so even when these excavations are converted into fistulæ, the tubes generally preserving their cylindrical form.

Symptoms.—Local.—Laennec has given us the following description of the signs of this disease:—

When the bronchial tubes of the whole of a lung are dilated, the sound given by percussion is duller than in the natural state, because of the compression of the pulmonary tissue; but this sign is usually less sensible, except other circumstances contribute to produce the same effect.

In the points where the dilatations are greatest, pectoriloquy may be heard more or less distinctly; it is accompanied by a mucous rattle, perfectly similar to the cavernous rhonchus of phthisical patients. Bronchial respiration is distinguishable on the same points, which an inexperienced observer would easily confound with the puerile respiration, because of its intensity. This sound becomes cavernous on the points of the chest, corresponding to the largest dilatations. The cough and mucous rattle have also the bronchial and cavernous characters in those dilatations which are nearest the surface of the lungs. The voice, respiration, and cough, often also give the sensation of the "Souffle voilé;" that is to say, of a thin veil, or humid membrane, floating and preventing the column of air from penetrating into the ear at each vibration.

Sometimes all these phenomena disappear for a certain time, particularly at the lowest parts of the lungs, because of the accumulation of mucus sputa: they reappear only after a copious expectoration, or a change of position.

When the dilatations are slight, and nearly equal in a certain number of tubes, there will be diffused bronchophony instead of pectoriloquy. When the dilatations are extensive, there will be found on all the corresponding parts of the thoracic parietes, bronchophony and bronchial respiration, and on some points only, perfect pectoriloquy.

Functional and General Signs. — Even where the dilatations are most extensive, the symptoms of the disease rarely indicate its gravity: most commonly there is no fever, nor marasmus. If the patient has no laborious occupation, he rarely feels a diminution of power: dyspnœa only occurs on rapid movement.

The expectoration is not characteristic; its abundance is only remarkable in very extensive dilatations: it is always mucous, or puriform, usually inodorous, occasionally of the smell of pus, or even of a fœtid wound. Sometimes the sputa augment with such rapidity, that you might suppose a vomica had ruptured.

It may be observed that the local signs of dilatation of the bronchi are common to several other diseases, particularly tubercular phthisis, abscess from peripneumonic inflammation, and gangrenous excavations: but the accumulation of all the signs can leave no doubt in the mind of the practitioner. We shall, however, enter into greater details of the diagnosis, when we arrive at the description of those organic lesions of the pulmonary structure, which dilatations of the bronchi simulate.

Treatment.—As the disease is a consequence of, or is complicated with, chronic mucous catarrh, it is evident that the only means of contracting the dilated tubes, is

by diminishing the secretion from the mucous surfaces. The treatment, therefore, is precisely the same as that recommended for chronic mucous catarrh.

BRONCHIAL HÆMORRHAGE.

By bronchial hæmorrhage is meant an excretion of blood from the surface of the mucous membrane lining the trachea and bronchial tubes.

Morbid Anatomy. — There is generally found a certain quantity of coagulated blood in the bronchial tubes, putting on the appearance of small polypi, which are merely the fibrous portion of the blood, often deprived of its colouring matter. The membrane itself is redder and softer than in the healthy state.

Causes.—This affection often occurs in young plethoric persons. It may be induced by circumstances which throw the lungs into considerable action, such as blowing wind instruments, hard exercise, and violent coughing. It will occasionally supervene upon the suppression of hæmorrhoids and the catamenia. The most common cause, however, is tubercular disease, and I confess that I look with more apprehension upon a small discharge of blood from the trachea than a large one, because the result is generally more dangerous. We sometimes find in epilepsy that a small quantity of blood is mixed with frothy saliva: its source is most probably also the bronchial membrane.

Symptoms.—The hæmorrhage is usually slight, spumous at first, but towards the end of the attack, the blood is coagulated. When the quantity is great, it is commonly caused by that state of the lung, denominated by Laennec, Apoplexia Pulmonum.

It is highly important to determine, whether the blood flows from the mucous surface of the bronchial tubes, or from the parenchymatous substance of the lungs. The absence of all the signs of the latter disease principally determines the diagnosis: thus, in bronchial hæmorrhage, there is no absence of respiratory murmur, nor is there crepitation on any point of the chest. When the hæmorrhage is slight, there is scarcely any acceleration of the pulse, nor does it present the hæmorrhagic vibration. Dyspnœa, heat and oppression beneath the sternum, scarcely ever occur in bronchial hæmorrhage.

Treatment —General bleeding should be employed, if the patient be plethoric: opening a vein in the foot, or the application of leeches to the inside of the thighs, is a common continental practice, if the hæmorrhage appears to depend upon a suppression of the catamenia.

Various astringents have been used—as acids, alum, superacetate of lead, iced drinks, cold air in currents: the most absolute repose and silence should be enjoined, and the absence from all stimulating liquids.

BRONCHIAL POLYPI.

Polypi of the mucous membrane of the bronchi are very rare: their structure is usually vesicular; that is to say, formed of a tissue analogous to mucous membrane, and inclosing small serous cysts. Laennec once found a concretion of an inch and a half in length, and four or five lines in breadth, attached to the commencement of the left bronchial tube, and nearly obliterating it. Its tissue was compact, and similar to the polypiform concretions found in the heart and arteries, but organization had evidently commenced, for it was firmer and less humid than these formations: its internal colour was white, mixed with shades of yellow and red; a few small blood-vessels were seen ramifying within it. On the external surface a still greater number of vessels were observed, and the colour was there of a reddish violet, particularly at its largest extremity. Laennec believes these concretions to be the fibrinous parts of the blood gradually becoming organized. We shall examine this opinion when speaking of the diseases of the heart.

CLINICAL LECTURE

ON

STRICTURE, WITH LACERATED URETHRA AND DISTENDED BLADDER.

Delivered at the Middlesex Hospital, November 1, 1834,

By Sir Charles Bell.

Our subject to-day is Stricture, with Lacerated Urethra and Distended Bladder.

I have before me the house-surgeon's case-book, from which I am about to read. He promises me an abundance of cases of stricture, and disease of the urethra and bladder, if I will only defer the subject; but I shall be satisfied to-day with one case, which brings, I think, the whole question of practice before you, and in a very impressive manner. Before I read this case, let me beg you to consider two conditions of the bladder, apparently very distinct, and in contrast with each other, yet both proceeding from the same cause—stricture in the urethra. What, apparently, can be more distinct than a distended bladder arising above the navel, or even as far as to the scrobiculus cordis,

and a bladder so contracted, that its cavity is not larger than that of a walnut, and its walls so firm and condensed, that in old surgical books it is called scirrhosity of the bladder, which scirrhosity I hope you understand to be, the density arising from frequent and powerful muscular contraction? These two conditions, arising from the same cause, do yet present very distinct symptoms. Is the practice, then, different? Let us inquire.

With regard to the first, viz. distention of the bladder, you have before you a case which exhibits the extraordinary torture which the patient endures from it; and you must be anxious to know what would be the result if the patient were left unassisted. There might be rupture of the bladder; and observe, the bladder may be ruptured in two ways:—If a person with a full bladder is thrown from the top of a coach, of which we have had several instances in patients brought into this hospital, the coats may be actually ruptured, and the bladder rent from the fundus to the neck; but when rupture takes place purely from over-distention, which is the case now to be considered, the appearances on dissection are these:—There is a small pin-hole, or perhaps two or three small holes, with black and ragged edges, near the fundus, and the bladder itself is found relaxed and empty, whilst the abdomen is full of urine. It is not then, properly, a rupture, but something more like that ulceration which takes place in the urethra, and lays the ground-work of fistula. It is owing to the excessive distention that ulceration takes place, so as to weaken the coats, and then the urine bursts through them. When this happens, the patient feels as if he were passing water, yet no water flows. By and by, instead of the round firm tumor which was felt in the belly, there is a general tumor, and an undulation, implying that the urine is abroad in the cavity of the peritoneum. In the meantime the patient is probably delirious, and in that case a man will put a pistol to his head, or throw himself out of the window; such cases have been narrated to me. The only instance which I remember coming under my own observation, was one where the delirium arising from this source assumed so much the character of mania, that a physician from a madhouse was brought in to consultation. This was great ignorance, and to the effect of aggravating the suffering of friends; for is it not an additional pang to be led to believe that a son, or brother, has died maniacal?. Such is sometimes the condition of a person with a distended bladder unrelieved.

When there is stricture, and a sudden obstruction comes on, distention takes place; but when there is a stricture without such sudden and abrupt obstruction to the urine, the bladder makes powerful and frequent efforts to relieve itself; and these continuing, cause a thickening of its coats, and a diminution of its cavity, and from which, of course, arises a necessity for still more frequent calls. The patient is obliged to rise sixteen or twenty times in a night; he is at last continually on his knees, with the *pot de chambre* between his legs; he makes, perhaps, half an ounce of urine at a time, and that with such continued effort, and such protracted pain, that fever and irritation arise, and he will die with effusion on his brain. Mark, then, I beg, because it leads to an important conclusion in practice, how a narrowing of the urethra will at one time produce a sudden distention, such as we have just seen, and at another a condition of equal danger, but more insidious, in which the state of the patient is not so apparent, and yet the danger is imminent. You will readily acknowledge, that from either of these conditions a patient must be immediately relieved; that there is no time nor opportunity for gentler means; it is only an operation that can save him. I will now read the case of distended bladder.

Stricture, with Lacerated Urethra, and the Operation.

"A man of colour, of the name of Wallis, came to the hospital about half-past twelve, groaning most piteously, with retention of urine. Blood was flowing from the urethra, and it appeared that a surgeon had been called, who had attempted to pass a catheter for him, but had failed; and that the attempt to relieve him by operation had been followed by a great flow of blood. The surgeon then administered a dose of castor oil and laudanum; but the attempts by manual operation failing, he bled him and sent him to the hospital. When he came to the hospital, a wax bougie was passed down to the stricture and withdrawn, but no urine flowed;"—that is a practice on which I shall make some remarks presently;—"he was therefore immediately placed in the warm bath, but still no urine flowed. The finest silver catheter was attempted to be introduced; the point entered a very narrow stricture, but it could not be carried forwards; and below, a little to the left of the stricture, an extensive tear was felt in the membrane of the urethra. It was only by avoiding this, and keeping the point of the catheter close to the upper part of the urethra, that the point of the catheter could be directed into the stricture. No urine came, and the bladder being now

very much distended, and the fundus having risen to the navel, it was as tense as a tennis-ball." Such was his condition; and the narrative goes on to state—"that it was about twenty years ago that this man first suffered from an obstruction of urine; that he was then on a voyage to China, and, if we understood him aright, the water was drawn off by the use of a bougie. For several months past he has suffered much from stricture; he was obliged to rise frequently in the night, and on making water, it flowed in a very small stream. When he had desire to make water, if he did not immediately attend to the call, it would come away only in drops; however, up to this time he had always been able to do without an instrument, till the morning in which he was brought to the hospital.

"The case was becoming very serious, and the surgeon of the week was asked to see him whilst in the warm bath. He ordered him to be put between blankets, and carried to bed; and he then attempted to procure an impression with a soft bougie of the state of the stricture. He then introduced the catheter, but said he felt the point of the instrument out of the canal. A consultation was then held, and the attempt was made to pass two or three catheters of different sizes and curves, but in vain. On examining per anum, (the house-surgeon continues to state) the lobes of the prostate were felt distinctly, the gland healthy, the bladder tense in front. In the consultation, the question was mooted, whether the bladder should be punctured by the rectum, or the membranous part of the urethra opened from the perineum. The only objection to the latter method was the possible difficulty of introducing the catheter from the wound into the bladder, and the possibility, therefore, of the sphincter of the bladder still resisting, and the bladder remaining distended. It was determined that the latter operation should be performed; but if there were great difficulty of passing the catheter, that the bladder should be punctured in the wound, as it was declared necessary to relieve the patient immediately."

Now the house-surgeon has properly put down "*instruments prepared for the operation* —lithomomy-tapes, elastic catheter, grooved sounds, directories, probes, sharp-pointed bistoury, tenaculum, bandage around the waist, trocar." In preparing to perform an operation, you ought to have every thing that can by any possibility be required. It is an unpleasant occurrence to be foiled in the first attempt, and then have to call for instruments which are not forthcoming, and which shew that something has occurred unexpectedly, and for which no preparation has been made.

"The patient was taken into the theatre, and placed on the table in the posture for lithotomy, and secured in the usual way. The finger of the left hand was introduced into the anus, and the point of a sharp-pointed bistoury was thrust through the skin, about half an inch in front of the anus, exactly in the central line. It was carried at once into the membranous portion; the handle being then depressed, the point was pushed on, so as to come out through the skin, about an inch and a half in front of the part where it entered. By this the corpus spongiosum of the bulb must have been cut. The moment the bistoury cut itself out, a gush of urine followed, which covered the operator. The moaning of the patient immediately ceased; he seemed already relieved. After a time the catheter was put into the wound, and slipped at once, with the greatest ease, into the bladder. The whole operation together did not occupy half a minute. The urine continued flowing in a full stream, and about two quarts were evacuated through the tube. There was some arterial bleeding; but the loss of a little blood was considered as an advantage. The catheter was secured in the bladder, and the patient sent to bed. The surgeon, clapping him on the shoulder, said, 'Now, my man, you shall go to bed, and have an opiate, and be comfortable;' on which he thrust his head out of the blanket, saying, 'Sir, I am in heaven,' and drew it in again like a tortoise. His relief was so perfect, that he presently *fell asleep on the table*." Was this really so, gentlemen? I was obliged to leave him, and knew not the circumstance: however, nothing can so fully demonstrate his previous suffering and exhaustion, and the complete relief. For my own part, I have never seen this, except where I have operated on the trachea.

"When he became warm in bed, the bleeding increased considerably; and in a quarter of an hour he bled to sixteen ounces: it was arterial, and came by jets; but after the house-surgeon had searched some time, no vessel was found. It could only be commanded by placing the finger on the cut through the bulb. A small ball of lint, with a string attached to it, was placed there, another larger one over it, then a piece of sponge, and two large compresses, with a bandage over the whole; and this completely commanded the bleeding, without obstructing the catheter. The wire was passed to ensure that the catheter was quite clear. The pulse strong, and full enough. He had lost about twenty ounces of blood.

"Eleven P.M.—No more bleeding; the

stilette again passed; all but the two lower compresses removed, for fear of too much obstruction to the urine, and that the catheter should get choaked in the night, and so inject all the cellular membrane.

"31st.—Passed a good night; pulse full, rather variable; no pain in the abdomen; urine trickles freely from the instrument as it is secreted. Poultice to the wound."

Remarks.—1. Now you have heard the case, and you will not accuse me of a want of decision, nor an unwillingness to operate when the occasion calls on any idea of the difficulty to be encountered; and therefore I take this opportunity of strongly impressing upon your mind, that if I seem unwilling at any time to operate, it is from another reason, than any distrust of my hand. And further, I take the opportunity to assure you, that though you have seen me, with a knife, cut at once into the perineum, yet in general practice, gentleness, perseverance, repeated slighter efforts, are the sure modes of curing stricture in the urethra; and not one case in five hundred requires any such means of relief. True it is the time may come when you require decision and a bold operation, such as you have seen me forced to perform; and as it may become necessary, you ought to prepare yourselves for its performance. But if time be afforded for gentle means, they are much to be preferred, and are surer to be successful;—I mean in cases where the stricture has not been abused.

2. The next question that arises is, What is the nature of this obstruction? Is it altogether mechanical, or is it partly mechanical and partly nervous or spasmodic? You must remember, that if a person have his bladder surcharged, though there be no obstruction at all, it will cease to act. I have this morning drawn off two quarts of water from a gentleman's bladder, where there was no difficulty whatever in passing the largest catheter, for I used the largest catheter purposely; but the bladder had been over distended, and consequent upon that there was paralysis—or at least, if not paralysis, a want of consent between the detrusor of the bladder and the muscles in the perineum. You no doubt remember that the neck of the bladder and the urethra have around them the compressor prostatæ, levor urethræ, and the ejaculator seminis, besides the columns of the levator ani. All these muscles must relax before a drop of urine comes, and any spasmodic action in them directly obstructs the passage, whilst it hinders the contraction of the bladder itself. The contraction of the one set of fibres, and the relaxation of the other, belong to the same act, like the condition of opposing muscles in the motions of the limbs; so that if the bladder be not in a state to execute its functions, these muscles are not in a condition to relax. It would be easy to illustrate this by the state of the stomach, the rectum, the uterus, or any hollow viscus. When a man has a stricture, and passes his urine with difficulty, being in the condition that this case describes—that is to say, unless he immediately attends to the call to make water—he will soon be unable to void it at all: he is liable to have his bladder surcharged; and no sooner does it become distended, than the fibres at the cervex become spasmodic. Then the bladder fills more and more, till it rises, and may be felt in the abdomen, and so it may to the umbilicus, or even to the scrobiculus cordis. You perceive, then, that although the original cause—the stricture—be a mechanical obstruction, there is superadded a cause *spasmodic;* and it is the management of this spasm that demands your attention—not the immediate cure of the *stricture.* This is the reason why the soft bougie was used, as the man describes in his case, and why it was again attempted when he was brought into the house. By passing the wax bougie, with the end softened, into the stricture, letting it remain there, and slowly withdrawing it, calling upon the patient at the same time to make an effort, and gently pressing the abdomen, the urine will sometimes flow; and when it once begins to do so, it continues. You understand, also, that it is for the same reason that the patient is bled, and put into the bath, and has a strong opiate administered.

3. It is a common question with us, when examining whether a pupil or a dresser be fit to be made house-surgeon, to ask what he would do when a man comes in with obstruction of urine? You see how necessary it is that he should be perfectly aware of what ought to be done, because such cases are occurring almost every day; and if he makes a mistake, and passes a catheter at an improper time, the case before us declares with sufficient emphasis what are the unhappy consequences. It is expected he should reply, "I would consider from what the obstruction proceeded. If he were an old man of seventy that presented himself, I should suspect the prostate, and examine that first, to see if it were enlarged. If he were a young man, I should ask him if he had been the subject of gonorrhœa, of discharge from the urethra, and if the discharge had been suddenly suppressed," because when the inflammation of gonorrhœa is suddenly checked, it is, in fact, travelling backwards; the discharge has not merely ceased, but the inflammation of

the urethra has increased, and very often it is the violence of the inflammation which stops the secretion. There is a certain degree of inflammation which promotes discharge, but a little less or a little more suspends it; and when gonorrhœal inflammation has increased to a considerable degree and crept back to the neck of the bladder, pain and spasm take place of the discharge. We should therefore require the house-surgeon to consider whether the obstruction arise from inflammation, and consequently spasm and impediment to the action of the bladder, or to stricture. I should expect him to say, "I must consider whether the patient has not got a stricture, for although I might draw off the water from an old man with an enlarged prostate, yet I am aware of the danger of attempting the same mode of relief where there is a narrow and irritable stricture;" and I should expect him to add, "whichever of these three causes the distress arose from, I would be careful in passing the catheter." As surgeon to a public institution, I should especially require attention to ascertain the nature of the obstruction, with reference to these three questions, before I would say he was a safe man.

(3.) In such a case, then, as I have read, where the history tells us there is a stricture, and the surgeon who first attempted to overcome it has ruptured the urethra by allowing the point of the instrument to get out of the right canal, we are precluded from doing those delicate operations which require repetition, and therefore time, to be effectual. When the point of the catheter has lacerated the membrane of the urethra anterior to the stricture, there will the bougie hitch and fall on every repetition; so that you are not only prevented from gradual dilatation, but even from that milder mode—gentle insinuation of the bougie, in order to induce relaxation of the spasm. Now comes the question home to us: where the bladder is rising, the torture extreme, and delirium is coming on, what is to be done? Is the bladder to be punctured, or are you to perform an operation on the perineum? I would say, the bladder is not to be punctured unless in some extreme cases, where the patient is so far gone from distention and inflammation, accompanied with long continued agony, that a little further delay will destroy him; and where he is not only gone very far indeed, or where there is a great complication of disease about the neck of the bladder. If a patient in this condition be put upon the table, and you commence an uncertain operation upon him, keeping him half an hour or an hour under repeated incisions, and poking with probes, and ineffectual endeavours to pass the elastic gum catheter into the bladder, he begins to vomit; the stomach sympathizes with the general suffering, and when he is put to bed he never recovers: he falls into a doze, or delirium, and you have destroyed him by a little too much excitement or irritation; you have thought by your dexterity to relieve, but you have failed in your expectation in that—you have erred in judgment, and your patient is lost. In such a case it may be necessary to pass the instrument into the rectum, and from thence into the bladder, and without pain, without irritation, without delay, to relieve him. But these are rare cases, and it is better to cut in the perineum, because you not only relieve him, but lay the foundation for a perfect cure. Still, however, much will depend on his condition.

I remember when it was a regular question (I need not say where), How long are you to wait before puncturing the bladder? You perceive the degree of distention is no criterion. because, after the bladder is distended to a certain degree, the urine drips away continually; and therefore a man may have a distended bladder to-day and may not be worse to-morrow, in consequence of the bladder permitting the surcharge to drip away. I need not remind you that an ill-educated surgeon is apt to be mistaken here just as the patient is. A patient calls you to his aid for incontinence of urine, but, upon examining the case, you soon find that he labours under retention; that the water which is dripping from him leaves constantly a couple of quarts perhaps in the bladder, which is the source of painful distention and inflammation. My object in stating this, is to shew you that it is the degree of suffering which, after all, must determine us. A bladder which, in consequence of stricture, has become so permanently contracted that it has not for many months contained more than two ounces of urine, must give excessive distress, and cause inflammation if distended; when a natural bladder will suffer greater distention without so immediately producing inflammation.

The degree of suffering, the roundness, firmness of the distended bladder, and tenderness of the abdomen, are our best indications. I would say, that when once you feel the bladder above the pubes, like a round ball under your hand, as tense as it is described in this case—the pulse excited, and the man's mind excited in an extraordinary degree—you must adopt the same rule as in hernia; *not to leave the house till he is relieved.*

(4.) Now comes a question of extreme delicacy, as it is to be expressed before you, and touching an operation of extreme delicacy; I mean forcing the stricture with a catheter. I acknowledge that

I have a narrow-pointed catheter; not sharp, but small, round, and smooth; with which I have sometimes saved the necessity of a more formidable operation, by passing it through the stricture. But it is to be done with fear and trembling; because, although you may succeed in putting the man (as this patient said) "in heaven,"—and I have heard the expression before—yet, on the other hand, you may rupture the urethra. In performing the operation, you must place the patient fairly before you, take care that the instrument is exactly in the centre, introduce it down to the stricture, put your finger in the perineum, and try to get the point of the instrument into the stricture. If you can feel it in the stricture, and, on attempting to withdraw it, find it is held, you may be certain that it has not passed in a false direction; and then, by slowly going on, and gently driving the instrument forward through the stricture, at the same time drawing the integuments of the perineum forward, and then introducing the finger in ano, and so carefully watching the progress of the point until it gets into the enlarged part of the urethra, you may thus save the patient. But I need not remind you of the danger of the operation; the case I have read sufficiently shews it.

(5.) With regard to puncturing the bladder, it may be done above the pubes, by the rectum, or by the perineum. But I have already stated that it is only in extreme cases, when there is much disease, and the person is just, as it were, upon the brink of running into a state of inflammation and fever, and delirium, that you can think of puncturing the bladder: the more legitimate operation is that which you have seen performed, or heard described.

When we speak of an operation in the perinenm, the first thing to be thought of is cutting the stricture. This is an operation of great delicacy: see how it is done. The patient is placed on the table, as for lithotomy; the incision is made in the perineum, and a grooved staff is passed down to the stricture, and the point cut upon, by which you get it into the urethra anterior to the stricture. You then pass a fine probe from the anterior part of the stricture, through the stricture; and if you succeed in this the operation is easy, for then you have just to feel the probe with the knife, and cut along it. When a patient has suffered what I have described, that part of the canal behind the stricture is enormously enlarged, and we have no difficulty there; the difficulty is in striking the stricture, and if you cannot get a probe through it, you must divide the callous part without a director, the object being to get into the enlarged part of the canal; you then pass a catheter through the penis, across the stricture, into the posterior part of the canal, and from thence into the bladder. The wound is then to be healed over the catheter. This is a pretty operation, when adroitly performed. But I say again (and I think many here have seen the operation attempted both in my hands and those of others), that it may be a tedious and uncertain operation, and is therefore not to be inconsiderately undertaken: you must be certain that the patient can bear the continued fingering, teazing, and cutting.

I have, then, to direct you to what you have seen here: the operation was done by cutting into the urethra posterior to the stricture. I have performed it (and I believe other surgeons have done the same) in a different way to what you have now seen—viz. by a cut of the scalpel upon the face of the perineum. Why have we changed the mode? I will tell you why, and it is important that you should know it. If you have a small gland to cut out about the breast or axilla, you feel it very distinctly through the skin before you begin; but when you have made your cut upon it, and when you have got your fingers among the fatty membrane, you cannot find it—it seems to have disappeared, and you dissect at random. It is very important to remember that you can distinguish such a body outwardly, before the incision is made, much more easily than when you have cut through the skin and are closer to it. So it is in respect to the parts in the perineum: it is possible, by introducing the finger into the anus, to distinguish the prostate, its two lateral lobes, its centre, where the membranous part of the urethra enters it; and this in a manner much more distinctly than when a cut is made through the integuments and the finger is in the wound of the perineum. Recollecting the difficulty of hitting the urethra after a deep incision, or of feeling the prostate among dissected parts, I thought it would be better if I put my finger in the rectum, to see that I was exactly in the centre, where the urethra traverses the prostate; and I then passed the sharp-pointed bistoury, directed by the finger (although the walls of the rectum were between the instrument and the finger). Besides you have here, in this mode of operating, a great advantage in the steadiness of the patient. When you pass a narrow bistoury through the skin, it is not more painful to him than the puncture of a needle; and when it is introduced, you can direct the point of it with great nicety. And now observe, when you think the point of the instrument has struck the membranous part of the urethra, depress the hand, and bring it out: by this the bulb of the urethra is cut, as it is very properly stated in the case.

You will please to observe, that the incision of the bulb being in the very central line, we do not touch the larger branch of the artery, as we do in cutting for the stone. Were it at all an object, I could introduce the point of the knife forwards in the perineum and round the prominence of the bulb; but I do not think there is sufficient reason for this, seeing that it is my principal object to have a free wound; that is, penetrating to the urethra, but large outwardly.

It has been stated that the patient ought, in this circumstance, to lose blood; and he cannot lose it from any part with greater advantage than from the bulb. This mode of operating relieves, whilst it is laying the foundation for a permanent cure.

I shall conclude by giving some advice to the house-surgeon. How is he to perfect the cure in this case? He is to begin to work upon the stricture; and let me remind him, that he is not to destroy the natural membrane of the urethra if possible. If you remove a stricture by caustic, or cutting, or by destroying the natural membrane, and substituting another, the latter never answers the purpose perfectly, or at least permanently. The natural membrane of the urethra is elastic in the finest degree, yields to the push of the urine; but if you have formed a membrane out of the cellular texture by condensation and inflammation, it has always a disposition to contract, and you have got a patient for life—that is to say, the man must always come back to have his stricture dilated. It is cruel to the patient, and putting yourself in a questionable position with regard to the honour of the profession to act thus, and therefore avoid it. I repeat, then, that the house-surgeon must, by gentle means, try to *dilate* the stricture—try to cause absorption of the coagulable lymph outside the membrane; and when he can pass a considerable instrument into the bladder, he will withdraw the tube from the wound, introduce a catheter along the penis, past the incision, and into the bladder, and so heal the external wound over it.

But again, if he finds unusual difficulty in the introduction of his bougie into the stricture, he will have to reverse the introduction of it, and passing it from below, prosecute his cure in that direction. I should regret the necessity of perforating the stricture; but if it must be done, it will be performed with comparative ease, when an open tube is pushed up to the stricture from below, whilst the perforator is introduced from above. I believe you are pretty well convinced, from what is passing around you, that the complaint of stricture is common enough to deserve all your attention.

OBSERVATIONS ON DIABETES MELLITUS,

AND ON

CALCULUS PASSING FROM THE KIDNEY.

To the Editor of the Medical Gazette.

Sir,

In the year 1824 I published a case of diabetes mellitus in M. Magendie's Journal of Physiology. I was then residing in Paris, and the patient whom I treated was an inmate of the house.

Upon a perusal of the case, it will be evident that the bleeding, which must have been considered by the editor of the journal as entitled to the credit of the cure *, formed only a part of the treatment, and perhaps not the most important part. Suffice it to say, that the woman was completely cured, and that, after a period of ten years having elapsed, I am enabled to assert that she has had no return of her disease.

Seven years' residence in Russia has confirmed me in the opinion which I then formed, of the efficacy of the vapour bath in restoring the secretion of the skin; and I am disposed to believe that my patient was cured, not by the bleeding, but by the use of this bath, to the efficacy of which, however, venesection may have greatly contributed.

If my view of the case be correct, it may lead to a more general and early use of this agent in the treatment of this obstinate complaint. The patient is still residing in the same family as she was when I treated her in 1824; so that I have the means of ascertaining that she has suffered no relapse whatever since that time, a period of ten years. I shall transcribe from M. Magendie's journal (tome iv. an. 1824) the principal features of the case.

Louisa Subirou was about fifty years of age when she first consulted me. She was rather corpulent and healthy in appearance, but subject to nervous attacks, and rather disposed to melancholy.

She had been indisposed for some little time previous, and had concealed her complaint from motives of delicacy; but was compelled at length, from the ur-

* "Histoire d'une Diabete guerri par une saignée." This is the title prefixed to the case by the editor of the journal.

gency of the symptoms, to reveal it. She was tormented by continual thirst, which she could not assuage by any quantity of fluid which she swallowed, although she drank from twelve to fifteen pints daily. She slept ill, and her tongue became very dry during the night; the skin also was dry and rough, and she could not excite perspiration by any of the ordinary means employed for that purpose. The bowels were constipated, and the digestive and nervous systems were much deranged. She made no mention at this period of the abundant secretion of urine; she considered the thirst as the chief disorder, and feared that she should become dropsical, as several of her family had died of that disease.

As soon as I was aware of the nature of her case, I took the first opportunity of sending some of the urine to M. Chevreul for analysis. He found that it contained a very large proportion of sugar. At this time the patient voided about fifteen pints daily.

I decided upon bleeding her, because she had, previous to this affection, suffered much from pain in her loins. Twelve ounces of blood were taken away. The blood formed a loose coagulum. She felt very much relieved for the time being, and all the symptoms diminished except the dryness of the skin.

I insisted upon her eating animal food only with a small proportion of bread. She drank equal parts of milk and lime water for common drink, and took ten grains of Dover's powder at bed-time. She used the warm bath every evening. Constipation was relieved by small doses of calomel and colocynth.

Soon after the bleeding the urine was reduced to eight pints daily; but it again increased, and a second bleeding to the same extent was resorted to. The blood was firmer in consistence than on the previous bleeding. The patient again felt much relieved, and said she was stronger than before she was bled. Two days after the second bleeding the urine diminished a third, and it had a decidedly ammoniacal smell. It still, however, contained a portion of saccharine matter.

As none of the means hitherto employed had succeeded in exciting perspiration, and as I trusted to the re-establishment of this function as the chief means of cure, so I determined to try the effects of the vapour bath.

The patient was exposed to a temperature of 45° Reaum. She perspired most profusely, and changed her linen three times during the evening. She found herself better the following day, but weak. She walked, however, the distance of a mile, warmly clad, and perspired freely. The urine was reduced to five pints daily. She repeated the bath five days afterwards, but could not support it so long as on the former occasion. She perspired most profusely immediately after the bath, and continued to do so moderately for several days afterwards, without using any means to promote perspiration. From this period all the symptoms of the disease vanished; and the urine, which was analysed four months afterwards, contained no particle of sugar.

Paris, November 1824.

Such was the treatment, and its results, at the time I published this case in M. Magendie's Physiological Journal.

I was then residing in Paris, and unacquainted with the use of the vapour bath, except as a medical agent. It is only after some years' residence in St. Petersburgh that I am acquainted with it, as a means used continually by all classes of people for purposes of personal cleanliness.

The vapour bath is a *sine qua non* of a Russian boor's existence. The soldiers and sailors use it twice, and the peasants at least once, a week. Baths abound in the capital; and in every village where there are twenty houses, there is one devoted to the purposes of a bath. People of all ages use them, and the heat, generated in various ways, soon throws the person into a profuse perspiration. Sometimes dry heat is employed, and the individual stands in the bath as in an oven. Vapour is produced by dashing cold water upon hot stones. The bather generally lies upon a plank in the hottest part of the bath, and is flagellated with soft rods, or he is scraped down with a kind of hoop, or rubbed with shavings or hair brushes.

Whichever of these processes he may undergo, and he has his choice, as also of his grooms, the effect produced is a profuse perspiration from every pore. When this has continued a certain time, warm water is dashed all over him, and then water a little cooler, and finally

water at a very low temperature. This is succeeded by dry rubbing, which produces a genial glow; and as the operation is generally performed of an evening, he retires from the bath to the bed or couch, and perspires moderately for the remainder of the day.

Such are the means employed by the people for the purposes of personal cleanliness; but the baths are employed medicinally, with frequent good effect. It is evident that no stricture can exist in the capillary vessels, nor that the function of these vessels can be altogether performed vicariously, when such excitement is produced as these baths necessarily procure.

As these circumstances are of daily occurrence, knowing the effects of the bath, and seeing its general use, I was induced to examine whether diabetes was a rare disease in this metropolis. The food of the people, which is much more saccharine than that of most other nations (the bread being made of rye, and sweeter than wheat bread), and the long fasts obliging them to live for months in the year upon bread and vegetables, would *à priori* militate in favour of the frequency of this disease.

It seemed probable, however, that the general and frequent use of these baths, by determining so much to the surface, would prevent the kidneys from usurping to such an extent as they generally do in this obstinate complaint, this function of the skin. Upon inquiring as to the frequency of diabetes, I found that it was a disease hardly known in Russia. Sir James Wylie informed me, that he had never seen a case among upwards of two millions of soldiers, whom he has in his long and useful career inspected. Dr. Treennius, a physician of great eminence, and formerly in very extensive practice both in Petersburgh and in the interior, has never met with a case. I can find no instance of this disease recorded in the list of maladies entered in the books of the civil or military hospitals for the last twenty years. I might mention also the names of many private physicians, who have never had an opportunity of witnessing diabetes in their Russian practice.

Such evidence may perhaps be considered more than of a negative nature in ascribing the prevention of this disease to the employment of baths, which excite general perspiration. It is not probable, that as long as I remain in Russia I shall have any positive evidence in their favour as regards the cure of diabetes; but I feel confident, by the success which I experienced from their use in the case which I have related, that much good may be expected from them when employed early in the disease.

I am aware that they have been before recommended in the treatment of this complaint, and that many have relied solely upon exciting cutaneous perspiration for the cure. For this purpose patients have been made to walk in the sun covered with blankets, as a sudorific means. It is therefore only in corroboration of the benefit to be derived from this plan of practice that I have ventured to offer these observations, which amount to negative evidence at least in its favour.

I know not what changes may have been operated in the habits of the English with respect to baths in general, but a residence on any part of the continent convinces us that baths are less employed in England than in any other country; which seems an anomaly in the habits of a people who are celebrated abroad for their *propreté personelle.*

Case of Calculus passing from Kidney.

In the autumn of 1833, about the month of August, I was informed by a gentleman, who consulted me, that his urine was as highly coloured as porter; and although he felt no inconvenience in any respect, as regarded his general health, he thought it was well to mention the circumstance to me. I recommended him to drink soda-water, and he did so for some days.

A month or six weeks after this occurred, he caught cold from hunting in wet weather, having been exposed for several hours to rain and wind, and getting wet in the flanks; and on the evening of the same day was attacked with what he supposed to be a fit of the colic, and he took some rhubarb and port wine, which were given him by some of his friends in the country.

As the uneasiness continued for some days successively, he again applied to me, and I gave him a good dose of castor oil, which produced its effect. One morning early, and a few days after this supposed colicky attack, I was summoned to him, and found him suffer-

ing very severely from pain in the right side, under the ribs, in the region of the right kidney, and extending towards the navel.

The pain seemed of a spasmodic nature; it was not increased by pressure; there was no one particular spot which was more sensible to the touch than another; the whole seat of the uneasiness occupied a space which might be covered with the palm of the hand. The pulse was not in the least affected; no headache nor fever; there was some vomiting, but no sensation in the testicle, nor any numbness of the thigh, nor any pain in the direct line of the ureter. There was no eructation nor flatulency, nor did the evacuations produced by clysters produce any sensible relief.

Fomentations, cataplasms, and opiates, relieved the symptoms; but for at least ten days afterwards there were repeated returns of the same uneasy feeling, which came on without any warning, and at no particular time or period, and left the patient afterwards totally free from pain, so that he pursued his occupations as usual, took the same hard exercise, and frequented society, although the pain would, from its sudden invasion, often oblige him to quit the drawing-room suddenly. The whole attack and its sequela lasted about three weeks. Small doses of calomel and opium, leeches applied to the part, warm baths, fomentations, clysters of linseed-tea with laudanum, castor oil, taken by the mouth, formed the whole of the treatment upon this first attack.

From the month of September till the month of December following, the patient had no return of these symptoms, and hunted and took his usual exercise, without any inconvenience; but in the middle of this month I was sent for to him, and found him labouring under very severe pain, which made him writhe his body from the torture. The attack began suddenly about 11 A.M., and as soon as it commenced he took a dose of castor oil, which he soon rejected from his stomach. He informed me that his water had been turbid for some days previous. The pain occupied the same spot as before, unaccompanied, however, by any nephritic symptoms. I gave him ten grains of calomel and one of opium in a pill, which relieved the pain in a few hours; but the vomiting continued, and castor oil had been twice rejected from the stomach, the bowels remaining locked. I took about fourteen ounces of blood from the arm. The blood presented no unusual appearance, but the bowels yielded several times immediately after the bleeding. This attack passed off as the previous one, but uneasy feelings remained for some time in the loins. The patient was recommended to pay very strict attention to his diet, and to take a blue pill once or twice a week, with some Cheltenham salts the following day; but this plan was never put in execution. As it appeared to me probable that the kidney was the seat of the complaint, I directed him to observe his water regularly, that no sand or particle of stone might escape without our notice. The patient remained free from complaint till the night of the 5th February, 1834, when I was sent for to him, and found him labouring under a very severe attack of his complaint. The symptoms did not differ from those of his preceding attacks, except as regarded the vomiting, which was more constant than before, and it seemed for the time to relieve his pain. I examined his urine; it was of a light straw-colour. An injection of linseed tea, with two ounces of castor-oil and a drachm of laudanum, were administered. Soon after its administration the patient fell asleep, and when he awoke he was free from all pain, but vomited every thing which he took into his stomach. He had no headache or fever; the skin was cool, and occasionally moist, and the pulse quite natural. The vomiting was allayed by saline effervescing draughts, but the bowels were constipated, and the anodyne enema not having returned, another, composed of senna and Epsom salts and a drachm of aloes, was administered. This produced two motions only. Several purgatives were subsequently administered, and as the patient felt his digestion impaired, he consented to take some blue pill regularly. He continued the pills for two or three days, but as he imagined that his gums were affected he discontinued them.

He remained free from inconvenience till the 24th of May, when he had another slight attack, which yielded to the warm-bath and opium in a few hours; but it was subsequently followed by considerable pain in the loins, and he attributed the attack to leaving off sud-

denly a flannel belt, which he had been in the habit of wearing, During this last attack, which was shorter than any of the preceding, the nephritic character of the complaint was more marked. The pain was more immediately in the seat of the right kidney, and there was, for the first time, considerable retraction of the testicle. The patient found it difficult to retain his water, and complained of a sense of numbness in the glans penis and spasm of the urethra, in expelling the last drops of water.

He has had four of these attacks in the space of eight or nine months, and each has been apparently excited by violent athletic exertion and exposure to cold. A few days after the last attack, I was informed that he had passed a very uneasy night, from continual pain in the urethra, about an inch from the orifice, and from a constant desire to make water. His shirt was spotted with drops of blood, and he told me, that after each attempt to void his urine he observed a drop of blood at the orifice of the urethra. He moreover informed me, that in making water it suddenly stopped in its passage, and then came out in a forked stream. The chief uneasiness was felt in the urethra. Sometimes the pain was dull, but sometimes of a sharp spasmodic kind. All the uneasiness which he had previously experienced in the loins and in the region of the kidney, all the nephritic symptoms had ceased, and now all the inconvenience was felt in the bladder. It was evident that something had passed from the kidney into the bladder, and the patient was strongly urged to be sounded; but as he was about to take a journey, he refused to suffer this operation until he returned, which was about fourteen days afterwards. He suffered a good deal of inconvenience from the jolting of the carriage, and the pain in the urethra was increased. His water stopped suddenly in its passage, and he felt externally that there was some foreign body in the canal. The medical man who came to his assistance extracted a rough-shaped calculus, which was broken in the operation, and a considerable portion of it was lost. The extraction of it created great local pain, but this was not succeeded by any constitutional irritation, and the patient soon felt relieved from all his complaints. The portion of the calculus which he gave me for analysis weighed six grains. It was analysed by a good chemist, and was found to be oxalate of lime pure.

It was ten months from the first uneasy symptoms which the patient experienced until the calculus passed into the bladder. True to the character of the mulberry calculus, there was never any deposit in the urine.

Your obedient servant,

Geo. Wm. Lefevre, M.D.

Physician to the British Embassy, St. Petersburgh.

St. Petersburgh,
September 1834.

ON PHLEBOLITES, OR CALCULI IN THE VEINS,

AND CONVERSION OF THE COATS OF VEINS INTO CALCAREOUS MATTER.

By Robert Lee, M.D. F.R.S.

Phlebolites have been found most frequently in the veins which return the blood from the uterine organs, the bladder, prostate gland, and rectum; but they have been met with also in the veins of the spleen, spermatic cord of aged men, the anterior and posterior tibial veins, and in varicose subcutaneous veins of the leg. Otto found them most frequently in the veins of the uterus, vagina, and bladder of persons who were more than fifty years of age. He discovered them once within the veins of the prostate in an old man. In all the cases the veins were varicose, and contained coagulated blood. In two instances gouty concretions existed at the same time in the joints; and such was the case in the man in whom the calculi were found in the veins of the prostate. Otto refers to Realdus Columbus for an example of phlebolites in the hemorrhoidal veins, and to Bartholin, Tulpius, and Walter, for the history of cases where they were found in the renal, meseraic, dorsal and vesical veins. Mr. Langstaff saw three calculi as large as peas in the veins of the uterus, and he has observed them also in the veins of the prostate, and he thinks they are formed most frequently in those who have diseases of the prostate and bladder*. Lobstein has found them in the veins of the testicle, uterus, bladder, rectum, and once in the veins of the spleen†. Tiedemann found numerous

* Hodgson's Treatise, p. 522. 1815.

† Traité d'Anatomie Pathologique. Paris, 1829.

concretions in the varicose veins of both spermatic cords of a man fifty-one years old. There were fifteen of these calculi in the right; in that of the left twenty-one. They were of different sizes, of a round or oval form, had a yellowish white colour, and lay loosely imbedded in coagulated blood. Some were, however, adhering to the inner coat of the vessel by a fine transparent membrane.

In one case the writer discovered several phlebolites in the spermatic veins of a lady who died at the age of thirty-five, and who had suffered repeatedly from abortion, and once from inflammation of the uterus. In a case which we examined with Mr. Holberton, of Hampton Court, where the mucous membrane of the rectum was ulcerated, we found several phlebolites in the left hemorrhoidal and vaginal veins. One of these was as large as a pea, and smooth on the outer surface; there were two others much smaller, which were deposited in the centre of small clots of the fibrine of the blood. The fibrine surrounding these was formed into thin concentric layers. The coats of the veins surrounding these bodies were healthy, but between these points and the ulcerations in the rectum their coats were disorganized by inflammation. We have repeatedly met with phlebolites perfectly or imperfectly formed in the spermatic and hypogastric veins of women who had died from malignant disease of the uterus. While engaged in writing this article, 24th July, 1833, we found a phlebolite of an oval shape, smooth on the outer surface, and about two lines in diameter, in the anterior tibial vein of an aged woman, who died in the St. Mary-le-bone Infirmary of cancerous ulceration of the bones of the face. The coats of the veins enclosing the concretion were thin and pellucid: over the tibia, two inches nearer the ancle, there was the cicatrix of a large ulcer. An aged female, with varicose veins, now under our care, has a large phlebolite in the anterior tibial vein of the right leg, which produces little or no uneasiness. In the right common iliac vein of Lord Liverpool there was contained a cylindrical concretion, an inch or more in length. Sir Astley Cooper, to whom the writer is indebted for an opportunity of examining this rare specimen, believes the deposit of calcareous matter to have taken place within the vein, and consequently that it is not an example of ossification of the coats of the vessel, as had originally been suspected. The iliac and femoral veins of Lord Liverpool, on the opposite side, had been completely disorganized by inflammation. It does not appear that phlebolites have yet been observed in the sinuses of the brain.

Phlebolites often attain the size of a common pea; more frequently they are smaller, and sometimes they do not exceed a millet-seed in size. Otto states that he saw one in the anatomical museum at Strasburgh of the size of a hazel-nut. They are usually of a yellow colour, and consist of concentric lamellæ, and are more frequently of an oval than round shape. According to the analysis of Iohn and Gmelin, they are principally composed of carbonate and phosphate of lime with animal matter. Dr. Prout has more recently analyzed some of these concretions, and his results are nearly the same.

A difference of opinion has prevailed respecting the mode of their formation. Mr. Hodgson thought it not improbable that phlebolites were formed in the surrounding parts, and made their way into the veins by progressive absorption. Meckel entertained an opinion that they were formed like encysted tumours. Andral states that calculous concretions sometimes push the internal membrane before them, and descend with them into the cavity of the vein. The membrane, he adds, becomes thin, and forms a true peduncle to the concretion. There is the closest analogy, M. Andral thinks, between these pedunculated concretions and those concretions sometimes met with in the interior of the joints, and he inquires whether it may not be possible for these bodies sometimes completely to detach themselves from the coats of the veins, and become loose in the cavity. Tiedemann believes them to be formed from the blood itself: this opinion Otto states is also supported by the observation of Errhman, according to which some of the concretions were still soft, and appeared to be formed from the fibrous matter of the blood—a mode of formation which Cruveilhier had previously noticed. That this view of the mode in which phlebolites are formed is correct does not admit of dispute, and Dr. Carswell has executed drawings to illustrate the various stages of their formation. The observations of Dr. Carswell prove that there is first formed a small coagulum of blood in the vein, and that in the centre of this clot a little nucleus with concentric lay-

ers gradually appears. By and by the red part of the blood is partly absorbed, and the fibrine makes its appearance with the usual physical characters. Then a certain arrangement can be perceived taking place in the fibrine forming lamellæ, the central one first formed apparently becoming cretaceous; and this cretaceous induration takes place throughout the different lamellæ until the whole is converted into a solid phlebolite. In the point towards the distal extremity of the vein there is sometimes a little nucleus of blood or fibrine, which becomes a concretion; and thus the phlebolites sometimes get a caudal extremity.

But in what manner the blood becomes coagulated in the veins so as to give origin to the formation of phlebolites, it is not so easy to determine. That this is sometimes the result of a slight degree of inflammation or irritation propagated from diseased organs along the vessels, is highly probable, from the facts already noticed respecting the consequences of phlebites. It must, however, be admitted that at the part where the phlebolite is formed there is in general no perceptible alteration of structure in the surrounding coats of the vein, although it has been employed in bringing back the blood from a diseased organ.

The conversion of the tissues which compose the veins into calcareous matter takes place so seldom, that Bichat questioned the possibility of its occurrence. The lining membrane of veins, he observes, does not become ossified in aged persons, as we observe in the arteries; its organization prevents it from being penetrated by the phosphate of lime. When it does happen, it is an unnatural condition; whereas ossification of the common membrane of red blood is a state almost natural to the aged *. Morgagni has, however, related a case in which the coats of the vena cava were in great measure cartilaginous, and even in some degree bony †. Dr. Baillie mentions an instance where a considerable ossification was found in the coats of the vena cava inferior, near its bifurcation into the two iliacs ‡. Dr. Macartney informed Mr. Hodgson that he met with several depositions of calcareous matter in the external saphena vein in a man who died of a diseased liver. There was an ulcer on the leg; but the depositions of calcareous matter appeared to have no immediate connexion with the ulcer. One of the depositions was nearly an inch in length, and was situated on the internal surface of the vessel *. Beclard found the femoral vein ossified at one point where it was in contact with the crural artery, which was converted into bone. M. Andral likewise found in one part of the thickened walls of a varicose femoral vein a very hard concretion, of the size of a small nut, formed by a deposit of phosphate of lime †. M. Otto, after alluding to various other authors who have observed ossification of the coronary veins, vena portæ, the brachial vein, &c., states that he has never himself met with ossification of the veins, but that he saw, in the Museum of Pathological Anatomy at Vienna, a splenic vein, a vena portæ, the brachial and femoral veins of an old man and woman, and also, in the Veterinary School at Munich, the preputial veins of a horse ossified ‡.

* Anatomie Générale, t. ii. p. 404.
† Morgagni, letter lxiv. art. ix.
‡ Transactions of a Society for the Improvement of Medical and Chirurgical Knowledge, vol. i. p. 134.

* Hodgson's Treatise on Diseases of Arteries, &c. p. 521.
† Andral, Précis d'Anatomie Pathologique, t. ii. p. 411.
‡ From the Cyclopædia of Practical Medicine.

A PROFESSIONAL TOUR IN ITALY;

WITH AN

Account of the Universities, Hospitals, &c. &c., of that Country.

By M. Roux §.

§ From a paper read by him before the Académie de Médecine, November 18, 1834.

Before I enter on the details of my Italian journey, I have some observations to make, of a general nature, respecting three principal topics—namely, 1. The institutions; 2. The men; and 3. The practice of the profession in Italy.

My tour was confined to the northern parts: particular circumstances prevented me from visiting Genoa and Turin; and I shall only speak of what I saw.

The medical institutions of Italy are of three kinds:—1. The academical assemblies; 2. The universities; and 3. The hospitals.

I have had no opportunity of attending any academic assembly during my tour—a circumstance, no doubt, owing to the period of the year at which I travelled: and even though I had, I should scarcely be inclined to expend criticism on the subject. I never derived much information from meetings of the kind; and remarks on medical societies might be deemed satirical in presence of the assembly before which I speak.—(Laughter.)

The UNIVERSITIES embrace a complete education in all the sciences. We have but one in France. In Italy there are as many as there are different states, and sometimes a plurality in the same state. Thus at Pavia there are two: and they are all perfectly independent of each other. It is remarkable, that in the Lombardo-Venetian kingdom there are few of them; indeed but two; while in the Papal states there are seven, and two or three in Tuscany. Florence, indeed, although the capital, has no university properly so called; yet it is a seat of education more fruitful than either Pisa or Sienna, which have each their separate university. There is this condition, however, attaching to the Doctors of Sienna and Pisa, that they are obliged, in order to obtain the free exercise of their art, to spend several years at Florence, and even to undergo some new tests of skill there.

Each university comprehends four faculties; of which medicine and pharmacy are one. The faculties of Pavia and Padua are the most flourishing. Bologna, which for some years rivalled both in the number of students, has latterly, in consequence of political events, seen its faculty dismembered; one part of it being transported to Ferrara: and the number of students has diminished owing to this circumstance—that strangers are no longer admitted. No university among them all, is to be compared with the single faculty of Paris; for none of them, with their whole four faculties included, can muster more than from 1500 to 1800 pupils, nor more than 400 in medicine alone.

Education.—The course of education nearly resembles that of France. In some respects, indeed, they have departments which we have not, and *vice versâ*. Thus in Italy they have not a chair of general pathology and therapeutics, or of hygiène, as we have; but for a considerable period they have had numerous clinics of midwifery, and there are chairs of ophthalmology established in the Lombardo-Venetian universities.

The establishment of these chairs is owing to the enthusiasm inspired into many Italian hearers who attended the celebrated Jaeger, at Vienna, and who were convinced by him of the utility of having them specially endowed. I must confess, however, that previously to my visit I was opposed to such special arrangements; nor has my opinion been altered since: in fact, I am more than ever persuaded that there is no advantage whatever to be derived from them.

The business of each course is marked out by a text (*un texte.*) I know not whether the professors do more than comment on the works so singled out (a very faulty practice), or whether they allow themselves a more liberal scope. For several classes the instruction is founded entirely on French works.

The Profession.—There are in Italy three grades, or orders, of medical men: Doctors of Medicine and Surgery, Masters in Surgery, and the inferior class of surgeons, corresponding to the *Officiers de Santé* in France. The period of study for each grade is different: three years only are required for the lowest class, four for the Masters in Surgery, and five for the Doctors.

In all the scientific towns there are beautiful collections, well endowed, and well attended to; and the more so according as the universities are complete. The finest collections are those of Bologna and Florence. Each cabinet, however, has its own peculiar attraction. Pavia would be my favourite for anatomy generally, and for human anatomy in particular. Florence, again, is distinguished above all its rivals by the excellence and beauty of its wax works; its perfection in this branch is carried to an astonishing degree, even in the minutest details. Yet these models in wax are far less wanted in Italy than in France; for practical anatomy, which is rather on the wane among us, is every where held in high favour in Italy. Dissection is practised every where; and I observed one custom which appears excellent;—the pupils of the first and second year are not allowed to touch the dead body; they only *assist* at the dissections.

The collections illustrative of natural

philosophy are capital in Florence. The people there are proud of their Galileo, and have a particular museum with that view.

I should leave my sketch of the state of things in Italy incomplete, did I not express my satisfaction in observing how much honour is bestowed on the illustrious men who have advanced our art; their monuments, their pictures, busts, inscriptions, &c. are every where to be seen. Thus at Padua, Fabricius ab Aquapendente, and Morgagni; Scarpa at Pavia, &c. are held in solemn reverence. It was, however, with pain that I saw at Pavia certain parts of the body preserved: I was both grieved and shocked when I was shewn the head of Scarpa undergoing the process of maceration, steeped in a vessel with other anatomical articles.

One fact regarding Scarpa is not generally known in this country. His body was opened after his death, conformably with his own request; and the head having been cautiously examined, there was found a remarkable alteration in the corpora striata. Now, for several of the latter years of his life, Scarpa, though in the full possession of his intellectual faculties, had lost somewhat of his power of recollecting proper names.

The Hospitals of Italy, as they are in all civilized countries, are well supported. On this head I shall only offer a few remarks, without either censure or praise, touching merely on a few of those points in which their hospital system differs from ours.

Almost all the Italian hospitals have been erected for the particular object for which they are designed: thus their structure is in accordance with that object. In nearly all of them the wards are disposed crossways, and are vast and airy. The clinical wards, however, are not so well arranged; they are very small, and very low. At Milan the architecture is superb, the wards very well distributed, and the hospital can contain from 1700 to 1800 patients, without the least apparent inconvenience.

In France we do not admit privileged patients, nor do we keep private wards and chambers. In Italy, however, there are every where found privileged and reserved wards,—an arrangement which seems to me beneficial for the treatment of patients who are able to pay, and who may wish for the attendance of men on whose skill they can rely.

There is no hierarchy (*hiérarchie*) in the French hospitals among the medical men in attendance; but in every part of Italy, the titular physicians and surgeons are attended by other medical men, ready to take their place in case of need; and there is always a physician or surgeon in chief, who enjoys a certain pre-eminence. In France, not only are the hospital physicians and surgeons independent of each other, but in no respect responsible for their actions. Whenever they consult one another, it is matter of pure courtesy. In Italy, the custom—the rule, is, to assemble in consultation, and at this *réunion* he presides who is at the head of the establishment; for in every hospital there is a medical man who holds the rank of director, or intendent, or superintendent. This custom appears to have certain advantages, particularly in surgery.

In France, the sisters (*Sœurs*) have a certain power, which they may sometimes be tempted to abuse. In Italy, devout country as it is, there are no sisters in the hospitals, with the exception of a few who are exclusively left in charge of female patients.

Finally, there are in every French hospital several persons possessing authority of a limited description, but always ready to tread on each other's heels as they proceed in the discharge of their functions. In Italy, there is one principal source from which all the arrangements emanate; and this principal authority is the physician, who is entitled the Director. He is usually chosen from among the elder physicians, and excused from medical practice. Most of these functionaries are very distinguished physicians.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

A Treatise on Tubercular Phthisis, or Pulmonary Consumption. By James Clark, M.D. F.R.S. (From the Cyclopædia of Practical Medicine.)

So considerable have been the accessions to our information regarding tubercular phthisis, of late years, that the mere compilation of a compendious treatise on the subject were a task requiring no

small diligence and ingenuity. But we think we may compliment the author of the present performance on having accomplished something more: he has not only given us a clear and comprehensive view of the opinions of all the eminent authors who have, up to the present time, treated of pulmonary consumption, but has interspersed a great deal of original matter derived from his own extensive practice and observation.

The arrangement adopted by Dr. Clark is sufficiently practical. Having devoted some preliminary sections to the ordinary and more obvious characters of the disease, he passes on to the pathological considerations connected with his subject: the statistical history of phthisis is then noticed very interestingly; after which he treats of the causes of the malady, and concludes with an ample and masterly account of the treatment, both preventive and curative, which he thinks it most proper to recommend.

In the section relating to tubercular disease in animals, there is a very curious notice of its probable occurrence even in the insect tribe, which we must extract:—

"Our friend, Mr. Newport, a comparative anatomist of great promise, whose name is already favourably known by his researches into the minute anatomy of insects *, has favoured us with an account of what he believes to be the tuberculous deposits in that tribe. In the larva of the sphinx ligustri, or common privet moth, he met with a peculiar matter disseminated in small, irregular, aggregated masses, white, opaque, and of a cheesy consistence, over the whole internal surface of the insect, between layers of very delicate cellular tissue. These masses were most numerous among the muscles; on the exterior of the alimentary canal, particularly the stomach; on the secretory silk glands, in the biliary ducts, and on the nerves. In the carabus catenulatus, or ground beetle, and in the staphylinus olens, both carnivorous feeders, he noticed similar deposits of more uniform and much smaller size, in the cellular and pulmonary tissues: he has also detected appearances similar to those observed in the sphinx ligustri, in the common cray-fish, the astacus fluviatilis of Leach. It is worthy of remark, that the sphinx was fed upon stale leaves of the privet for some days previous to examination, the unusual wetness of the season having prevented a fresh supply. The deposition of the same matter has also been produced by purposely feeding the insect upon deteriorated or stale food.

"Although the existence of tuberculous disease in insects requires to be established by more numerous observations than have as yet been made, still the view which we take of the pathology of tuberculous disease inclines us to believe that no class of animals is exempt from it; we therefore have little doubt that the application of the causes which led to it in the human species will also induce it in any animal which is exposed to their influence.

"All the milch cows in Paris become tuberculous after a certain period of confinement to the house. We have been informed that for some time after the disease has commenced, the quantity of milk obtained from them is greater than before, and their flesh is more esteemed by the unsuspecting epicure than that of the healthy animal. A circumstance of the same kind is mentioned by Aristotle, who observed tubercles in a pig, the ox, and ass. He says, in regard to strumous pigs, that when the disease *(grandines)* exists in a slight degree, the flesh is sweeter *(caro dulcior est)*. Historia Animalium, lib. viii. cap. 21."

One or two passages relating to the hereditary transmission or origin of phthisis, may not be uninteresting to the reader:—

"That pulmonary consumption is an hereditary disease,—in other words, that the tubercular constitution is transmitted from parent to child, is a fact not to be controverted; indeed, we regard it as one of the best established points in the etiology of disease. But it may not be so generally admitted, that various other morbid states of the parent produce the predisposition to tuberculous disease in the offspring; a position, however, which we hold to be equally true, and still more important in its consequences. A parent labouring under tubercular cachexia, entails on his offspring a disposition to the same affection, proportioned to the degree of dis-

* See his papers on the *Sphinx Ligustri*, in the Phil. Trans. 1833 and 1834.

ease under which he labours. Examples of this fact are constantly present in the families of scrofulous parents, where we find the scrofulous constitution much more strongly marked in general in the younger than in the elder children. We even occasionally meet with families the first children of which are healthy, while the last are the subjects of tubercular disease; the health of the parents having undergone a change during the increase of their family. There may be exceptions to this rule, depending on circumstances beyond our cognizance, but we have little doubt that it is generally true.

"It may appear that we are disposed to generalise too much, in ascribing tubercular disease in the offspring to morbid conditions of the parent; nevertheless, we have not formed our opinion upon superficial observation, nor without mature consideration; and we feel persuaded, that the more carefully the subject is investigated, the more correct will our views be found. We have frequent opportunities of remarking a strong disposition to this disease in the children of parents who enjoy what is usually termed good health, and in whose family no scrofulous taint can be traced; whereas, according to our own observation, we never see the parents in an unhealthy state, whatever the nature of their disease may be, without finding, at the same time, that the children are strongly predisposed to tubercles. An opinion is entertained, that one generation sometimes escapes tubercular disease, although their parents and children suffer from it. This is to be explained by the improved state of health enjoyed by the generation exempted, and by the other circumstances which counteract or prevent the development of tubercles."

Dyspepsia in the parent, the author thinks, is the most fertile source of cachexia of every form in the offspring; shewing itself in a decidedly tubercular constitution, where no such state had previously been known in the family. Other circumstances likewise, though not perhaps so evidently, may hereditarily excite the strumous diathesis in children; for we often see the latter presenting the characters of the scrofulous diathesis at the earliest age, while the parents are in the enjoyment of good health, and free from all appearances of tuberculous disease, local or constitutional. "Some remarkable examples of this kind," says Dr. Clark, "have come under my observation, where whole families have fallen victims to tubercular consumption, while both parents have not only enjoyed good health themselves to an advanced age, but have been unable to trace any hereditary disposition to the disease in their families for generations back."

Among the measures of *prevention*, we find the following valuable remarks relative to the *exercise of the pulmonary organs themselves:* a source of safety for the phthisically inclined, which is usually but too much neglected:—

"Dr. Autenrieth, of Tubingen, according to Sir Alexander Crichton, first recommended the practice of improving the narrow and contracted chest by deep and frequent inspirations. He advised his patients to place their hands upon some solid support, and to exercise themselves by taking repeated deep inspirations; but cautioned them against carrying this so far as to produce pain. We are in the habit of recommending the full expansion of the chest in a manner somewhat different from that of Autenrieth; we desire the young person, while standing, to throw his arms and shoulders back, and while in this position, to inhale slowly as much air as he can, and repeat this exercise at short intervals several times in succession: when this can be done in the open air, it is most desirable, a double advantage being thus obtained from the practice. Some exercise of this kind should be adopted daily by all young persons, more especially by those whose chests are narrow or deformed, and should be slowly and gradually increased. Fencing, the use of dumb-bells, and similar modes of exercising the arms, will also be eminently useful in attaining the important end we have in view; but they should never be carried so far as to induce fatigue or uneasiness. If regularly employed by boys under this necessary restriction, they would not merely expand the chest, but would tend to remove that disproportionate development of their upper and lower extremities which we so frequently observe in youth. By thus exercising the upper extremities, and the muscles of the trunk, and inflating the lungs to their full extent, the chest and pulmonary organs will acquire their due proportions.

We also consider exercises of this description particularly necessary to persons engaged in occupations which require a bent or stooping posture; and especially to those mechanics, as tailors and shoemakers, whose constrained position seldom allows the upper parts of the lungs to be fully expanded.

"Reading aloud and public recitation, will also, when prudently employed, be useful in strengthening the pulmonary and digestive organs, and in giving tone and power to the voice. The clear and distinct enunciation, which is acquired only by long practice, is seldom found associated with pulmonary disease, and we are therefore inclined to commend the practice of recitation and elocution at schools. It would, we believe, be difficult to cite the example of any great orator who died of pulmonary disease, while many might be adduced whose health was improved and their life prolonged by the beneficial effects of this exercise. Cicero was disposed to phthisis in early life, and Cuvier attributed his exemption from pulmonary disease, to which he was expected to fall a sacrifice, to the increased strength which his lungs acquired in the discharge of his duties as a public lecturer."

Perhaps a better illustration of the healthiness of the practice of public oratory, and of its conduciveness to longevity, could not be afforded, than in the case of the late Mr. Thelwall, who, though a person of slight figure and *physique*, and little used to tranquillity in the habits of his life, attained an age considerably beyond the period allotted to man, enjoying to the last the most powerful energy of voice and action. He was the only person, in recent times, who taught and practised the art of oratory on true physiological principles.

The Medical Pocket-Book for 1835. *Containing a Case-Book and Almanack, &c. &c.* By JOHN FOOTE, Jun. Renshaw.

REALLY a very useful little book, containing an abstract of every thing in the world—that is, in the *medical* world. Particulars of our corporations, societies, medical schools and universities, at home and in France; a phamacopœia, new medicines, London bankers, hackney-coach fares, and Halley's comet: quite a *multum in parvo*. In one respect, however, the *parvum* is too conspicuous—we mean the portion allotted for cases; which would require a Lilliputian to write in it. We would recommend that the alternate page, devoted, or rather intended to be devoted to this purpose, be hereafter assigned merely to the names and addresses of the patients: this purpose it might answer, by making the two pages facing each other represent one week, and leaving larger spaces for each day. With this change it will be more useful; nevertheless we recommend Mr. Foote's new year's gift to our readers.

The Principles of Ophthalmic Surgery; being an Introduction to a Knowledge of the Structure, Functions, and Diseases of the Eye; embracing New Views of the Physiology of the Organ of Vision. By JOHN WALKER, Assistant-Surgeon of the Manchester Eye Institution.

AN exceedingly concise and comprehensive little volume. It takes in all the chief facts relating to the structure and functions of the eye, as well as every thing really valuable connected with the treatment of eye disease. In the shape of an appendix, the author gives an excellent glossary of all the terms generally employed in ophthalmic surgery, with their etymology, and German and French synonyms. His "new views" of the physiology of the eye require no particular announcement from us, for they must be familiar to the readers of this journal, in which, either at length or in substance, they were originally published by the author himself.

MEDICAL GAZETTE.

Saturday, Nov. 29, 1834.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

EVIL OF DISPENSARIES, AND HOW IT MAY BE CHECKED.

THERE are two modes in which an immense number of persons in this coun-

try, but more particularly in the larger towns, procure medical attendance gratuitously — namely, by application to their respective parishes, and to dispensaries. Both of them are in various respects objectionable, as we have endeavoured on repeated occasions to demonstrate—degrading the parties relieved, by destroying their sense of independence, and injuring the medical profession, by depriving them of a very large sum annually, which would otherwise accrue, from persons perfectly able to pay, but mean enough to prefer the cheaper expedient of applying to a neighbouring "charity."

That the parish surgeons are generally over-worked, and under-paid, is notorious; but we fear that with them, as in the case of dispensaries, much of the evil arises from the extent to which the spirit of competition is carried—a spirit which too often degenerates from a fair and commendable rivalry, into a wretched system of mutual injury, by underselling each other till the remuneration at last received be utterly unworthy any man of liberal attainments to accept for his services—scarcely more, in fact, than a ploughman would earn by his labour, and certainly less than many an "operative" can easily obtain by the fruits of his handicraft.

Again, as to the dispensaries, we readily admit their utility within certain limits, but we cannot too strongly reprobate the extent to which they have been carried. In the metropolis (with which we are more intimately acquainted) it is within our personal knowledge that petty tradesmen in the neighbourhood of such institutions frequently become subscribers from purely mercenary motives, contributing twenty shillings, and twice as many patients, annually to the "charity,"—the facility, if not the positive privilege, of obtaining dispensary letters, being held out as a bonus to their customers; — nay, we have known letters of recommendation actually sold for a mere trifle, and, especially when so obtained, used by the parties who have purchased them with all the exacting arrogance which the vulgar are wont to display on claiming what they consider to be a right; so that the attendance of a physician or surgeon, or both together, with medicines and all appliances and means to boot, are demanded *(or commanded)*, for the moderate sum of sixpence sterling! Hundreds and thousands of persons are thus annually relieved, who unquestionably ought, and who otherwise would per force become the patients of the general practitioner, by whom no inconsiderable emolument would thus be fairly derived, from means which are now, by injudicious charity, diverted to the gin-shop, or the haberdasher's, to pamper the appetites, or to feed the vanity, of the undeserving. This may seem harsh, but we speak, as we have said, from a personal knowledge of the facts; and we scarcely think that we can too strongly oppose a system which, by the indiscriminate supply of relief, brings charity itself into discredit.

One of the most direct and least objectionable methods of obviating these great and growing evils, appears to present itself in the substitution, for common dispensaries, of those which are called "self-supporting;" and it is a conviction of the importance of the subject to the members of our profession, as well as to the public at large, which has induced us still to persevere in urging it on their attention. Another consideration which likewise weighs with us, is the desire to correct what it appears is an erroneous supposition, promulgated in a recent number—namely, that no institution of this nature existed in the metropolis. An

intelligent correspondent has put us right in this respect, and has furnished us with some satisfactory and important information relating to a successful experiment which has been made in the "North-west London Self-supporting Dispensary." The general plan adopted is a close imitation of that which has proved so advantageous at Coventry; and a like fate, we trust, awaits it here. It is no less gratifying to us, who have early and earnestly advocated the system, than it is creditable to the parties themselves, to find that this truly enlightened and patriotic scheme, of teaching those whose means are small to be provident, and of securing to them relief undegraded by charity in the hour of sickness, has already attracted the notice, and received the patronage, of the Bishop of London, and several noblemen and gentlemen of distinguished benevolence. Encouraged as it has been by the countenance, and aided by the contributions, of such friends, there is every reason to hope that the experiment may prove successful. But a still more cheering assurance of the issue is to be found in the fact, that not fewer than 350 of the industrious among the class of operatives, servants, and labourers, have already become subscribers, contributing their weekly mite towards the general sum. An address, with the view of explaining the objects, and inducing persons to become members with a view to future benefit, has been extensively circulated, and appears to us extremely well adapted to its purpose. The following is an extract:—

"The advantages offered by the Self-supporting Dispensary are the following:—

"I.—You will have tickets of admission constantly by you, which will enable you to procure medical assistance without any trouble or loss of time.

"II.—You will be saved the humiliation of *begging* a charity letter.

"III.—You will be spared the degradation of applying to the parish.

"IV.—You will be prevented from incurring debts which may be hard or even impossible to pay, and your minds in sickness will not be troubled with the fear of a doctor's bill.

"V.—You will have no need to apply to ignorant persons or to take quack medicines, which often seriously injure the health, and cost more than the whole year's subscription.

"VI.—You may choose your medical attendant, and if your case be a difficult one, you may have the other physicians and surgeons to consult together about it.

"To gain all these advantages you have only to pay your weekly penny, which scarcely any are too poor to afford, when in health.

"Thus the calamities of sickness, which may come upon yourselves or families at any time, will be lightened, and under the blessing of God, removed, whilst your own industry and foresight will preserve you in a state of honorable and praiseworthy independence."

A more detailed prospectus, addressed to persons of a higher class, who may be expected to become honorary contributors, has also been sent to us, and has our entire approbation: from this also we subjoin a short extract, explanatory of the principles and the plan on which the institution is founded.

"The institution is supported by two distinct funds,—the *honorary* and the *ordinary* fund.

"The honorary fund is derived from the subscriptions and donations of the benevolent, and is applied to defray the expenses of the establishment and the dispenser's salary.

"The ordinary fund consists of the small periodical payments of the poor subscribers (one penny a week for each adult, and one halfpenny for each child, or one penny for all the children of a family, where there are more than two), and is devoted to the purchase of drugs, and the remuneration of the ordinary medical attendants.

"Before persons can be admitted to the benefits of the institution as ordinary subscribers, their circumstances are investigated by the secretary and a

sub-committee, to ascertain that they really belong to that class for which the institution is formed. The proceedings of the sub-committee, as well as the general business of the institution, are under the direction of the committee. The power of controlling the committee, of altering or making laws, and of electing or removing officers, is vested in the governors (donors of ten guineas, or annual subscribers of one guinea), who meet once a year, or oftener, as circumstances may require.

"The following are the prominent advantages which the Self-supporting Dispensary offers:—

"I. *To the public generally:—*

"By promoting among the industrious classes habits of prudence and forethought, and by providing them against the contingencies of illness, which now are continually and unavoidably increasing the burthens on public charity and parochial expenditure.

"II. *To the individuals subscribing:—*

"By enabling them to procure promptly, in the way most pleasant to their feelings, and most consistent with their means, efficient medical advice and medicine, and thus to maintain their station through the trying times of sickness, in honest and praiseworthy independence.

"III. *To the medical profession.—*

"By freeing practitioners in general from those calls on their time and services for which there is little chance of payment in the usual way, and by securing to the ordinary medical officers of the dispensary a moderate remuneration for their time and services.

"IV. *To existing dispensaries and other charities:—*

"By relieving them of many applicants who cannot be considered legitimate objects for gratuitous relief, and thus enabling them to extend their benefits to a larger number of the really helpless poor."

With regard to the third party here mentioned, whatever may be the feelings of others, *we* have no doubt that any change must be good which frees the medical profession from the unjust and most oppressive tax of attending a number of improvident and unprincipled among the poor, who demand their services with all the authority which the professed intention of paying bestows, but who, when the hour of their trouble has passed away, forget their just debt—or at least postpone their payment of the "Doctor" till every other demand upon them has been answered; strengthened in their contumacy by the too easy indulgence with which medical men almost uniformly treat their debtors. This is no imaginary, nor even a highly-coloured picture. The thankless and profitless, but most wearisome labours of some of our profession, among the lower ranks in London, are neither known nor appreciated by society at large; and well assured we are that it is an evil which cries loudly for abatement. We could name a general practitioner, residing in a densely populated district, who toils incessantly at his useful but ill-paid vocation. Last Christmas he sent out bills, chiefly among the petty tradespeople and artisans, to the amount of 800*l.* the total of his just and hard-earned profits: of this sum, (the whole of which would have afforded but a very moderate recompense for his time and medicines) he had actually received at Midsummer the miserable dole of 130*l.*; nor did he expect to obtain more than another hundred pounds, even with all the mortifying expedients of dunning, or the still more vexatious appliances of the law.

We have heard that some general practitioners object to the system of self-supporting dispensaries, and we are most sincere in saying that there are few things we should be more unwilling to undertake, than the support of any cause calculated to do them injury: but we do not see how such effect can result from a system which has for its very basis an acknowledgment that, at all

times, "the labourer is worthy of his hire;"—a system which renders those very persons who now demand his attendance, and deny his recompense, familiar with the necessity of being provident, and accustoms them to contemplate the remuneration of the medical practitioner as a reasonable and familiar constituent in their expenses. To us it certainly appears that the evil to those who practise among the persons who alone would become members of a self-supporting dispensary, cannot well be increased—that any change must be a change for the better. Influenced by these views, we again repeat, that if zealously and faithfully administered, the new institution which has called forth our present observations can scarcely fail ultimately to succeed, and that meantime it has our best wishes for its prosperity.

ANATOMY IN ITALY.

Two things seem to have particularly struck M. Roux in his late Italian tour —the respect every where paid to the memory of departed greatness, and the ardour evinced for the pursuit of practical anatomy. Of both, however, he had rather an unpleasant proof in one instance. He was shocked, he says, at Pavia, *to see the head of the illustrious Scarpa actually undergoing the process of maceration, in a vessel along with other anatomical preparations.*— (See p. 308.)

UNIVERSITIES OF PRUSSIA.

We extract from the official returns published at Berlin in the present year (1834), the following statistical statement:—

Universities.	Total number of Students.	Medical Students.	Ordinary Med. Professors.	Extraordinary Med. Professors.	Privatim Docentes.
Berlin	1732	320	11	13	14
Bonn.....	797	129	12	1	1
Breslau	1046	137	8	3	5
Greifswald	236	52	4	1	2
Halle.....	868	89	7	3	0
Königsberg	452	58	5	2	3
Munster ...	292	0	0	0	0

MEETING OF STUDENTS OF THE LONDON UNIVERSITY.

THE *LANCET*, AND THE LATE REGULATIONS OF THE COLLEGE OF SURGEONS.

To the Editor of the Medical Gazette.

Sir,

A very imperfect account of the late meeting of the Students at the London University, on the subject of the new regulations of the College of Surgeons, having appeared in the last number of the Lancet, and this account being calculated, in the opinion of several of the students, to do considerable injury to their character as a body, I beg to request your insertion of the following statement, for the correctness of which I pledge myself.

A notice was issued at the close of last week, calling upon the students to meet on Monday, the 20th, "to express their detestation of the tyrannical regulations lately issued by the College of Surgeons." This notice was anonymous. The students assembled at the time appointed; and it was evident that the majority came, not from approving the object of the meeting, but because they did not wish that any proceedings should go forth to the world, as emanating from their body, which might in reality express the opinion of a very small part of it. No one seemed ready

to open the business of the meeting; and the question was at length asked, by whom it had been summoned, on which Mr. Thomson* stated, that he was one of six who had agreed on issuing the notice; and he was accordingly requested to take the chair. Mr. T. was then asked whether he had not gone to the Editor of the Lancet, to request him to be present at this meeting, to which he (Mr. T.) replied, that he had gone with others to Mr. Wakley, to inform him of the meeting which was to take place, and to request him to send a reporter. Mr. T. then explained his object in calling the students together; and as it was evident that he had taken the exposition of the new regulations given by the Lancet as the ground of his opposition to them, several individuals, myself among the rest, pointed out the gross mis-statements which had been made in that journal respecting them. It was then moved that "it is inexpedient that this meeting should give expression to any opposition to the new regulations;" and this proposition appeared to coincide with the wishes of the great majority of students present. It was, however, violently opposed by a gentleman, whose speech is given at full length in the columns of the Lancet, but of which only about *two sentences* were actually delivered,—so much laughter and disturbance being excited by it, that the chairman, after in vain attempting to restore order, vacated the chair, which Mr. Chippendale was then requested to take. The motion was soon afterwards put, and carried by a very large majority, only about six hands being held up against it. Of the remainder of the meeting, I am sorry that but too true a picture is given in the columns of the Lancet. The vote of censure which was proposed on those individuals who had summoned the students together, emanated from a very natural feeling of anger, that so much time should be lost in attending a meeting for which no business was prepared.

I will now, with your permission, venture one or two remarks upon the regulations which have been the source of so much misrepresentation and unpleasant feeling. By the first, every student, on the commencement of his education in London, is required to register at the College the amount of his previous studies, if any, and also to produce evidence of having entered to those studies which are necessary to complete his education. No student can, I presume, object to the first part of this regulation, as the same form has long been required by the Apothecaries' Company, and has never been made the ground of any complaint. I confess that I do not know in what sense to understand the second part: if taken in its literal sense, it certainly would press rather heavily on the student; but I presume that it has been either completely misunderstood, or that it has not been put in practice, as I am not aware that any students have been asked what lectures they have entered to in London, that register being made by the teachers of the different schools. It is to be regretted that some uncertainty exists among the students, as to whether it will be necessary to have the certificates already obtained re-signed upon the form now prescribed by the College, various answers having been given to this question, when put by different individuals.

With regard to the second regulation, no objection can of course be felt by the students to the mere registration and quarterly return which is required from the teachers; but the system of *espionage*, as it has been termed, which is imposed on the teachers by the latter part of the regulation, ought, I should think, to meet with more opposition from those gentlemen themselves, than from the students. I cannot see how a lecturer, with a class of say 200, can form a correct estimate of the degree of diligence of each individual; whilst, on the other hand, I do not see why a diligent student should object to such an account being kept, though I think you will agree with me, that the regularity of attendance on lectures is by no means the only criterion of a student's diligence and anxiety to improve.

In conclusion, I would beg to suggest to my fellow students, that the Council of the College of Surgeons is composed of *gentlemen;* and being so constituted, is not likely to put forth any regulations deserving the epithets of unjust or oppressive; and that they can act far better than by submitting to

* I have no hesitation in giving this gentleman's name, as it has already appeared in the Lancet.

be led by a small faction who, for their own purposes, endeavour to excite discontent in the general body.

Hoping that I have not trespassed too long on your valuable columns, I beg to subscribe myself

Your obedient servant,

A STUDENT AT THE LONDON UNIVERSITY.

November 22, 1834.

[The writer of this letter has given us his name.—ED. GAZ.]

HOTEL DIEU, PARIS.

Curious Case of Viper-bite—Alarming Symptoms—Recovery.

THERE is at present, in this hospital, a case, such as is rarely met with in Parisian practice;—a patient who has been bitten in the metropolis by a viper, and who has exhibited all the extraordinary symptoms to which such an accident is usually said to give rise.

Giraldon, a quay porter, aged 30, was occupied, on the 31st of October last, in depositing some bundles of faggots at the Pont Neuf, when out of one of them dropped a benumbed viper. He took it up in his hands, warmed it, and amused himself with it for five-and-twenty minutes without any mischief. He then took the reptile home with him in a box, and put it beside the stove. Next day, towards noon, he was informed that vipers were sold, and he was inclined to make some money by his; so he took the box under his arm, and, accompanied by a friend, proceeded to the *Marché des Innocens*. On the way he went into a wine-shop, and, wishing to make a parade of his capture, turned the viper out of the box on the counter. The cold of the zinc gave the animal some annoyance, so that it moved briskly about, and writhed itself round a bottle. The by-standers became alarmed; but Giraldon, anxious to get the viper into the box again, seized it with his right hand. He was bitten in a moment, on the second phalanx of the little finger.

In spite of the sharp pain he felt, he persevered in his object; and being unable to shake it off, seized it by the neck and tore it away. Still he was determined to sell his viper, and, putting it in his pocket, proceeded towards the market: but he had not gone far when he felt so unwell, with sickness of stomach, tottering limbs, and confusion of head, that he was obliged to sit down on some steps. His hand was visibly swollen. At this time, no more than five minutes had elapsed since the bite.

Supported and almost carried by his friend, he reached the shop of a *pharmacien*, who enlarged the wound and put some drops of ammonia into it, administering also some of the same remedy internally. The cauterising of the wound was very painful, and caused the patient to faint away. He was likewise affected with frequent vomiting. When he was brought home and put to bed, a violent tremor seized him. His arm, in the course of an hour, had become double its natural size; his chest and his neck swelled in the evening; he was insatiably thirsty, vomited constantly, and suffered violent colic pains, with diarrhœa.

On the following day, Sunday, Nov. 2, twenty-four hours after the accident, he was attended by a medical man, who tried mercurial frictions on the arm, and made him take a potion having ammonia in it. But the symptoms becoming more and more serious, he was taken on the day after (Nov. 3) to the Hôtel Dieu, where, on admission, his state was described as follows:—The hand, arm, and forearm, are tense, three times the ordinary size, red, and painful; all the inner side is ecchymosed, and even denuded of the cuticle; phlyctenæ are observed on different parts of the hand. On opening the wound to the extent of half an inch, it appears greyish at the bottom, and presents an eschar, probably the result of the cauterisation. The chest and walls of the abdomen, down to the navel, are considerably swollen, elastic, and not preserving the impression of the finger.

The patient was now in a state of prostration: the tongue blackish and dry at the point; the teeth dusky and foul. He felt an undefinable uneasiness at the pit of the stomach, with general pains. A constant desire to vomit; with colics and diarrhœa. He was, in fact, in so alarming a condition, that all the medical men expected the worst. Their expectations, however, have not been fulfilled: the man may be at present considered as out of danger.

The remedies employed, we are inclined to think, had but very little to do with the cure, and the patient would probably have got well without them. They consisted simply of emollient fomentations to the arm; a draught with ten drops of ammonia, on the first day of his admission, which only aggravated the vomiting, and had to be discontinued afterwards; twenty grains of ipecacuan, which seem to have had no effect; and lastly, twenty leeches to the pit of the stomach, in consequence of the

pain felt in that spot. It is evident that there was no distinct line of treatment adopted.

On the whole, we cannot refuse assent to the opinions of MM. Merat and Fontana, that the bite of a single viper is inadequate to take away a man's life, and that the effects which it produces, however alarming they may appear at first, are all gone by the fifth or sixth day.

The patient, for the last four days, has been nearly quite well. His chest is no longer swollen; he eats and drinks, and is in good spirits. The arm alone is still ailing *.

ON THE

NATURE AND TREATMENT OF SUSPENDED ANIMATION.

WHATEVER be the suffering which precedes what is called death, the moment of that death is but its termination, but the conclusion, as far as our feelings are concerned, of the proeess of dying. As soon as disease is established, the act of dying is begun, and we have no reason to believe that, as far as the body is concerned, its nature is in any respect changed in what is called its termination. It is, from the first to the final ceasing of all the functions, a more rapid than natural decay of the powers of life, with, while sensibility lasts, more or less suffering, according to the cause which produces it. In recovery, our suffering terminates by the removal of that cause; in what is called death, by our becoming insensible to its effects; the bodily process being in no other way influenced by our total insensibility, to which the name of death is applied, but that the consequent ceasing of respiration aceelerates it.

The body at this moment can no more be regarded as in the act of dying than at any other period of the disease; and the removal of the offending cause will not only in many cases at this period, if proper means be employed, but in some, even a short time after it, be followed by recovery. Thus, even after the period at which, according to the common meaning of the word, the process of dying is completed, it is, under certain circumstanees, not too late to arrest that process, and restore the sufferer to the perfest enjoyment of his faculties. Recovery may take plaee after respiration has, from submersion, for a few minutes ceased, and the sufferer is, in the common acceptation of the term, dead, his sensibility, and consequently his respiration, independently of artificial means, being finally extinguished.

That this may happen, it is necessary not only that the vital system should have been just before in a state of healthful vigour, but also that the respiration should not have failed from the failing sensibility, but the operation of the offending cause. Here the sensibility fails from the failure of respiration, not, as in other cases, the respiration from the failure of the sensibility; but this difference in the succession of events makes no differencc in the general nature of the actual state induced.

The recovery depends on our being able, more or less perfectly, to restore the function, the failure of which has caused the failure of all the others, as far as it has taken place, before the process of dying has proceeded too far for the restoration of the sensitive system. If no artificial means are employed, the date of death here is the time at which the sensibility ceased, and justly, because at that time death, according to the common meaning of the word, has taken place. The individual no longer feels and wills.

If there were even the last remains of sensibility, breathing would take place without external aid, as happens when the submersion has not been long enough wholly to extinguish it. The individual has, without such aid, finally ceased to feel and will, and is therefore what we call dead. His blood still continues to move, and all the assimilating processes, as appears from the experiments above referred to, are still going on; but this is no more than happens, more or less, in all cases after what is called death; the only difference being that from the nature of the offending cause, and the short duration of the disease, these funetions are in a state of greater vigour than when the loss of respiration has been the effect of the loss of sensibility, which makes no difference in the nature either of their remaining powers or the circumstances in which they are placed, and would not prevent their ceasing, as usual, if no means were employed to arrest the dying proeess. I have dwelt the longer on this case, because it affords a good illustration of some of the preceding as well as following parts of the subject.

From the experiments which have been laid before the Society (Philosophical Transactions for 1822, 1827, and 1829, and Experimental Inquiry, Part II. chap. xii.), we have reason to believe that the effeets of artifieial respiration in restoring those whose breathing has been interrupted till the sensibility is destroyed, would be greatly aided by the use of voltaic elec-

* Bulletin de Therapeutique, et Gaz. des Hôp.

tricity sent through the lungs in the direction of their nerves, and that many might thus be restored in whom infiltration of the lungs alone fails. The inflation of the lungs in such cases acts in two ways. It gives to the blood of the smaller vessels of the lungs some of the arterial properties by which they are aften excited, and aeting through the blood of these vessels, it communicates to that of the larger vessels, and of the heart itself, more or less of the same properties, independently of the blood already changed being moved on towards this organ; for M. le Gallois has shown that after the circulation has permanently ceased, the blood may, to a certain degree, be changed by inflating the lungs, not only in the trunks of the pulmonary veins and the heart itself, but even in the great arteries.

There is reason to believe, from the whole of my experiments, that the lungs should not be inflated more than eight or ten times in the minute, and that the injection of large quantities of air and great force in its injection should be avoided; and consequently the patient placed in the position in which the chest expands with the greatest ease. One of the chief defects of artificial breathing is, that in it the chest is expanded by the pressure of the injected air, whereas in natural breathing the air enters in consequence of its expansion. But the most essential difference between natural and artificial breathing in such circumstances is, that there cannot, till recovery is far advanced, be the proper supply of nervous influence, the due action of the vital parts of the brain and spinal marrow only being restored in proportion as the due force of circulation returns. Now it appears from what is said in the Philosophical Transactions for 1822 and 1827, and more fully in my Inquiry into the Laws of the Vital Functions, that voltaic electricity sent through the lungs in the direction of their nerves, is capable of performing as perfectly as that influence itself, the part which belongs to it in respiration, which is so essential, that the more perfect animal always dies from impeded respiration if the nervous influence be withdrawn from the lungs, unless voltaic electricity be supplied, which enables it to breathe as well as when the nervous influence is entire.

A proper apparatus, therefore, for sending voltaic electricity through the lungs in the direction of their nerves and in due power, should be added to the other means of resuscitation, which would render them, and probably to a great degree, more successful. The force of this observation will be perceived when it is considered that it is at the time of the first application of the remedies that the chance of recovery is greatest, and consequently that the immediate application of the whole means of healthy respiration, as far as we possess them, is of most consequence. It appears from what has been said, that the due functions of respiration cannot be restored till the due degree of nervous influence is supplied, and this cannot happen from infiltration of the lungs till the due force of circulation returns. Now the fact, explain it as we may, is, that voltaic electricity so perfectly supplies the place of the nervous influence in the lungs, that their functions are equally perfect under the influence of either. The one can only be supplied at an advanced period of recovery, that is, in fact, only in those cases where the success of our endeavours can be secured by other means; the other is, in all cases, within our reach on the instant *.

PURIFICATION OF CARBONATE OF SODA.

By M. Gay Lussac.

This salt is commonly purified by repeated crystallization, but it retains so large a quantity of interposed mother liquor that many operations are required to entirely free it from other substances, and after all but a small quantity is obtained. The following process having appeared to me extremely advantageous, I think it may be useful to make it known.

This process is analogous to that which is followed in France for purifying nitre. It is as follows:—Take the crystals of carbonate of soda, such as are met with in shops; having washed them, make a saturated hot solution; when this is set to cool, stir constantly with a rod or spatula to disturb the crystallization, and to obtain small crystals resembling sand: the cooling may be accelerated by placing the vessel containing the saline solution in cold water. It sometimes happens that when very much cooled, the solution does not crystallize, and that it suddenly becomes solidified. This is the moment to stir very rapidly, to prevent the conglomeration of the crystals. This delay in the crystallization may be prevented by throwing a few crystals into the solution at the moment when it begins to be supersaturated.

Having obtained the crystals, put them into a funnel, in the neck of which place a little tow or cotton to retain them. At first let them drain, then wash them with small quantities of distilled water, waiting till the preceding washing has run through.

* From Dr. W. Philip's Treatise on Sleep and Death.

Test from time to time the washings with nitrate of silver, the washings being previously saturated with pure nitric acid: the purification of the salt is complete when the liquid remains transparent. By this process, and in the first operation, the greater part of the carbonate of soda employed may be obtained in a perfectly pure state. The mother liquor and the washing may be evaporated and treated in the same manner. The same mode of purifying may be used with advantage for many other salts. Its efficacy is founded upon the extreme facility with which water runs through and well washes sandy crystals, such as are obtained by disturbing the crystallization.—*Annales de Chimie et de Physique*, and *Dublin Journal*.

ANTI-PSORO-SYPHILIDE.

By this name Dr. Troncin, of Paris, calls a specific which he offers to the world as an infallible means of eradicating all venereal affections, past, present, and to come. The composition of his remedy is as follows:—

Distilled water of Vervain.
——————— root of Asclepias.
——————— roots and bulbs of Alisma Plantago.
——————— Cicuta Aquat. leaves, flowers, and seeds.
——————— Mentha Piperita: aa. 1 *litre*.

Mix, and pass a current of pure chlorine through them for half an hour; then add,

Corrosive Sublimate.....	48	*grains.*
Eau de Cologne.....	1	*litre.*
Essence of Peppermint.....	1	*gros.*
——— Bergamot.....	½	*gros.*
Oil of fine Aspic.....	1½	*gros.*
Sulphuric Æther	2	*gros.*

Always shaking the mixture well upon every addition.

The *Anti-psoro-syphilide* is used as a lotion, and a cosmetic.—*Gazette des Hôpitaux.*

POISONING WITH CANTHARIDES.

In the Eighth Annual Report (1833) of the New York House of Refuge, we find the following curious case:—A boy, 17 years of age, in a fit of anger took an ounce of the tincture of cantharides, supposing it to be laudanum. It was soon followed by convulsions of the most violent kind, which, after a few days, left him apparently well. He now had a presentiment that he should die on the succeeding Sunday; and with that idea deeply impressed upon his mind, he fervently exhorted his associates to reform their lives. His convulsions returned, and he died on the day he had predicted. His last attack was accompanied by the following remarkable symptoms:—During the intervals of the convulsions, and after they had ceased, while he was in a state of perfect insensibility, and volition entirely suspended, his limbs would retain for any length of time the same position in which they were placed by any person present. If they were placed in an erect, or horizontal, or flexed posture, they remained so, perfectly motionless.

LITERARY INTELLIGENCE.

In the Press.—Observations on the Causes and Treatment of Ulcerous Diseases of the Leg. By Mr. J. Spender, of Bath.

Dr. Prichard's new work on Insanity, and other Disorders of the Mind, accompanied with numerous Cases, exemplifying various descriptions of Madness, is in the press.

Preparing for Publication.—A Clinical Account of Fever, Gout, Rheumatism, Cholera, Jaundice, &c. and various Diseases of the Chest; with remarks on their Pathology and Treatment. By Dr. Aldis, Member of the College of Physicians, London.

Received for Review.—Wanderings in New South Wales, Batavia, Pedir Coast, Singapore, and China, &c. &c. By George Bennett, F.L.S. 2 vols. Bentley, 1834.

WEEKLY ACCOUNT of BURIALS,

From Bills of Mortality, *Nov.* 25, 1834.

Abscess	6	Inflammation	23
Age and Debility	44	Bowels & Stomach	8
Apoplexy	10	Brain	2
Asthma	20	Lungs and Pleura	10
Cancer	2	Insanity	7
Childbirth	7	Jaundice	2
Consumption	81	Liver, diseased	5
Convulsions	43	Measles	13
Croup	3	Miscarriage	2
Dentition or Teething	6	Mortification	8
Dropsy	20	Paralysis	5
Dropsy on the Brain	19	Scrofula	1
Dropsy on the Chest	3	Small-Pox	5
Fever	13	Spasms	3
Fever, Scarlet	16	Thrush	1
Fever, Typhus	1	Unknown Causes	9
Heart, diseased	1		
Hooping-Cough	11	Stillborn	18

Increase of Burials, as compared with the preceding week . . . 93

NOTICES.

Mr. C.—We shall be happy to receive the article alluded to.

Mr. Mayo's first lecture on the Pathology of the Joints, next week.

W. Wilson, Printer, 57, Skinner-Street, London

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, DECEMBER 6, 1834.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture X.

DISEASES OF THE PARENCHYMATOUS STRUCTURE OF THE LUNGS.

Having thus, gentlemen, described the disease of the aerian passages, we now proceed to those of the parenchymatous substance of the lungs.

The diseases of the substance of the lungs may be subdivided into two sections: 1st. Primary diseases of the pulmonary tissue. 2d. Diseases of the substance of the lungs arising from adventitious deposits. I offer you the following table explanatory of the order we shall follow:—

1. Primary diseases of the pulmonary tissue—
   - Peripneumonia.
   - Œdema Pulmonum.
   - Apoplexia Pulmonum.
   - Emphysema Pulmonum.
   - Asthma.
2. Diseases of the substances of the lungs, arising from adventitious deposits. These deposits are—
   - Tubercles.
   - Ossific deposits.
   - Cysts.
   - Hydatids.
   - Medullary Sarcoma.
   - Melanosis.

1st. *Primary Diseases of the Pulmonary Tissue.*

Peripneumonia.—By peripneumonia we mean an inflammation of the substance of the lungs. Although it is a disease of very common occurrence, yet its morbid anatomy was not well understood until described by Laennec. We shall proceed precisely in the same order which we followed in the first section, and consequently at once describe the morbid anatomy of this affection.

Morbid Anatomy of Peripneumonia.—This subject may be considered under five different stages, or states, most of them having different signs, and requiring different modes of treatment. These states are named, 1. Engorgement. 2. Hepatization. 3. Purulent Infiltration. 4. Vomica; and 5. Gangrene.

1st Stage—Engorgement.—The lung is now heavier than natural; its external colour is livid, or violet, and its firmness is increased: it still crepitates, though in a less degree than in the healthy organ; it feels more compact, and pits upon pressure like an œdematous limb, When a section is made, its surface is of a bright red colour, and a large quantity of sanguineous and spumous serum flows from the incision. The alveolar or spongy texture of the lung is still perfectly apparent: here and there a few firm and compact points may be seen, indicating approaching hepatization.

2d Stage—Hepatization.—The lung no longer crepitates upon pressure, because no air is contained within it; it has acquired the weight and firmness of the liver, and hence the term hepatization.

The colour of the external surface of the hepatizated lung is often less livid than in the state of engorgement; internally it varies from violet to a deep blood-red tint. these colours are often so intermingled and shaded, that the cut surface presents the mottled aspect of certain marbles, or granites, and the similarity is rendered still greater by the inflamed lung being spotted irregularly by the black pulmonary matter, looking like small spots of mica disseminated in it. The branches of the bronchi and blood-vessels are seen ramifying over

the surface of the section, and the interlobular cellular tissue becomes more distinct than in the natural state; it is whiter, and does not appear to participate in the inflammation.

There is no exudation from the section of a hepatized lung; but a thick and red-coloured fluid, in which can be frequently distinguished a matter still thicker, opaque, white, and puriform, may be scraped off by a scalpel.

If the hepatized lung be torn, or a thin slice of it be examined by a strong transmitted light, its texture appears granular, and the grains are small, red, round, or ovoid, and somewhat flattened; these are doubtless the air vesicles, rendered solid by the increased thickness of their parietes, and the infarction of their cavities.

When a lung is entirely hepatized, it appears, on a first view, to be increased in volume, but it really is not so: this appearance arises from the solid organ containing no longer any air, and consequently not collapsing on the opening of the chest.

It sometimes happens, especially in children, that small patches of hepatization occur here and there in the lungs, confined to a lobule, the surrounding lobules being perfectly healthy, or only slightly infiltrated. This state is called *Lobular Pneumonia.*

3d Stage—*Purulent Infiltration.*—The pulmonary tissue preserving still the same firmness and granular structure, as described in the second stage, becomes of a pale or light straw colour. At first, slight yellow spots of concrete pus are disseminated here and there, and render the shades upon the hepatized surface still more varied, irregular, and mixed. These points enlarge, and unite until the whole becomes of a straw colour. A yellow, opaque, viscous, and puriform matter of a faint smell, may be scraped off, and the substance of the lung now becomes more soft and humid, and may easily be penetrated by the fingers. The granular structure finally disappears entirely.

In old persons, the lungs have always a dark aspect; this arises from the quantity of black pulmonary matter contained within them: when, therefore, these organs are in a state of purulent infiltration in advanced life, this black colour, by its mixing with the yellow, gives a grey tint, very different in aspect from the same condition of lungs in young persons. This has been called *grey hepatization.* In adolescence and infancy, the infiltrated concrete pus is of a fine whitish yellow, and, as it softens, an unctuous matter may be scraped off, which has been mistaken for fat.

4th Stage—Vomica, or Abscess.—It is commonly supposed that abscess of the lung is of frequent occurrence, as a result of peripneumonia: nothing is however more rare. Laennec, during twenty years, only met with five or six instances in many hundred autopsies. My friend, Mr. Langstaff, does not possess in his splendid collection a single specimen. I have met with none, after twelve years' habitude in post-mortem examinations. I here shew you, however, a preparation of this disease, which I found in our museum, and which I believe has been there for many years. No doubt, tubercular excavations have been frequently mistaken for peripneumonic vomicæ. I have seen what may be called pseudo-vomicæ, formed by an inexpert anatomist, tearing away a lung adhering to the costal pleura, and plunging his fingers into the organ softened by purulent infiltration.

Laennec describes a case in which he found an abscess situated at the middle and anterior part of the lung; its form was elongated and flattened: in proceeding from its centre, the liquid pus changed into a purulent detritus, then into a firmer tissue, still fully infiltrated with pus, and, finally, at half an inch farther the lung was in the ordinary state of purulent infiltration. Andral mentions another instance, in which, towards the middle part of the inferior lobe, there was found a sort of "bouillie," containing in its centre true pus; the pulmonary substance immediately around it was in a state of detritus, and beyond that, of purulent infiltration.

5th Stage—Gangrene.—Laennec has described this disease in a special article: I think it best, however, to place it here, for the sake of arrangement, although it may be considered doubtful whether gangrene is ever a consequence of common inflammation of the lung. It is probable, but not certain, that it is essentially and primitively a gangrenous affection, as anthorax, malign pustule, &c.

There are two anatomical forms of this affection; the one non-circumscribed, the other circumscribed.

a. Non-circumscribed Gangrene.—This is one of the rarest forms of organic diseases. Laennec saw but two cases in twenty-four years. You have before you, gentlemen, a beautiful preparation of the lung in this state.

The pulmonary structure is more humid, and easier to tear, than in the natural state; it is of the same density as in peripneumonic or cadaveric, or serous engorgements of its tissue. Its colour varies from shades of dirty white and slight green to a dark or almost blackish green, sometimes combined with a mixture of brown or dirty yellowish brown: these various tints are often irregularly mixed. The lungs also, around the gangrenous part, is infiltrated

with sanguineous serum, and is, in fact, in a state of peripneumonie *engorgement;* the gangrenous part falls into a state of putrid deliquium. You pereeive that a large portion of this lung hangs in filaments. A sanious fluid, of a greenish-blaek tint, oftentimes mixed with blood, and possessing a most horrible fœtor, flows from the diseased mass.

The non-eircumseribed gangrene oeeupies always the largest portion of a lobe, and frequently a whole lung. In some points the healthy pulmonary strueture confounds itself insensibly with the gangrenous parts; in others, the lung is in a state of peripneumonic engorgement around the disease: rarely, and only in a few points, is it hepatized.

b. Circumscribed gangrene.—This species differs from the preceding, by its oeeupying only a small part of a lung; by its slight tendeney to invade the surrounding parts; and by its being a more ehronie affection.

Cireumseribed gangrene may be eonsidered in relation to three states—1st, gangrenous esehar; 2d, deliqueseent sphaeelus; 3d, exeavation resulting from the evaeuation of the gangrenous matter.

1. *Gangrenous eschar.* — A gangrenous esehar is irregular in its form and size; its eolour is greenish-blaek; its texture more humid, compaet, and hard, than that of the healthy lung. It presents the appearanee of an eschar formed upon the skin by the aetion of lunar eaustic, and has a distinet gangrenous odour. The surrounding lung, to a certain extent, is in a state of engorgement or hepatization.

2. *Deliquescent sphacelus.* — The esehar gradually beeomes blaeker, or brown, or yellow; it softens into a filamentous mass, and remains sunk in a depression, formed by the destruction of the surrounding mortified parts.

More commonly the esehar softens into a kind of putrid "bouillie," of a dirty greeu colour, sanguinous, and horribly fœtid. This matter bursts into the nearest bronchial tubes, is gradually evaeuated, and leaves an ulcerous excavation.

3. *Gangrenous excavation.*—The pulmonary tissue surrounding the exeavation is infiltrated with a dark-eoloured fœtid serosity; after several days, points of hepatization appear disseminated upon its surface. The colour of the engorged lung is reddish-black, and the organ where diseased contains but very little air.

When the esehar separates, the parietes of the eavity become lined with a false membrane of a grey or dirty yellow colour. This membrane is opaque, soft, and sereretes a turbid pus, or black sanies, of a gangrenous smell. Sometimes the false membrane is produced even before the separation of the eschar, forming a line of demareation between the dead and living parts.

Often the pseudo-membrane does not exist; and then the fœtid pus is seereted from the parietes of the uleer itself. These parietes are then firm, ereak when eut with a sealpel, and are of a eertain dryness. If ineised, the surfaee is seen granular. This state of the lung rarely extends more than half an ineh or an ineh from the exeavation, although it has been seen to oeeupy the whole lobe in which the eavity is situated. In other cases the parietes are soft, as if fungoid and putrilagenous: large blood-vessels are oecasionally seen traversing the eavity, denuded and isolated, but intaet; at other times these vessels are partially destroyed, and their open mouths give oeeasion to a hæmorrhagy, whieh fills the exeavation with elots of blood, and may produce a fatal hæmoptysis.

The decomposed gangrenous esehar oeeasionally opens into the pleura, and eauses pleuritis, accompanied by pneumo-thorax: not unfrequently, a series of gangrenous excavations exist, more or less communieating with eaeh other, and often establishing a direet passage for the air from the trachea into the pleuritie cavity.

State of the Bronchi in Peripneumonia.—The mueous membrane of the bronehi is usually highly reddened in peripneumonia, although rarely swollen: when purulent infiltration supervenes, it is rendered sometimes pale, or of a more intense and violet red; and its tissue softens.

Situation of Peripneumonia.—Peripneumonia almost always commenees at the lower lobes of the lungs, and has a strong tendeney to invade the diffcrent portions of the organ from below upwards: of course the suecession of morbid changes will therefore oeeur soonest in the inferior lobes; so that supposing a whole lung to be inflamed, and a perpendieular seetion to be made of it, from its apex to its base, the lower part will be found in a state of purulent infiltration, the middle in that of hepatization, and the superior engorged with bloody serum. You must always observe, however, that the lines of demareation of these states are rarely perfectly marked and distinct, but that they run into eaeh other by an insensible mixture or gradation.

Anatomical Characters of the Resolution of Peripneumonia: Engorgement.—The red serous fluid infiltrated into the tissue of the lung is absorbed, and the pulmonary structure beeomes as dry as usual; a colourless serosity, however, frequently sueeeeds to the bloody serum, and remains for an uncertain time.

Hepatization.—The hardened parts first beeome pale, and pass from a red state to

a grey or violet, and then to the natural colour; but they frequently remain somewhat redder after they become permeable to the air. While these changes of colour succeed each other, the lung loses its hardness, becomes more humid, and appears to contain more serosity than blood; which serosity becomes gradually more and more spumous.

The granular aspect of the hepatized lung gives way to the reappearance of the aerian vesicles. The diseased parts remain for some time more firm, elastic, and heavier than natural, no doubt from the hypertrophy of the parietes of the air cells. The resolution does not proceed equally, for some points may be seen here and there hepatized in their centres, whilst their circumference is confounded by an insensible gradation of the inflammatory engorgement into the healthy structure.

Purulent infiltration.—When the disease has arrived even at this stage, Laennec affirms that resolution may take place without any disorganization of the pulmonary substance. At the commencement of the resolution the yellow colour of the lung becomes paler and whiter; the pus is mixed with serosity, which contains a little air; the pus gradually diminishes, and puts on a grumous appearance; the air cells become again apparent; the lung now feels firmer than in peripneumonic or serous engorgement, and it crepitates slightly under the finger. The surface of a section is of a very pale dirty yellow, or green. If the resolution is very advanced, this tint alone remains, and the pulmonary tissue is only slightly infiltrated with serosity, which finally is absorbed.

Duration of the different stages of peripneumonia.—This disease is highly acute in its nature, rapid in its course, and requires the prompt use of remedial means; its duration is nevertheless variable. Laennec has seen the state of engorgement last seven or eight days, and invading the whole of one lung, and part of another, before any portion was hepatized. This was the case in the influenza of 1803 and 4, and I had repeated occasions to see the same in that of last year. In other instances, and particularly in weak and aged persons, or when combined with any other serious malady, the inflammation passes into the state of purulent infiltration in thirty-six, or even twenty-four hours.

Usually the disease runs the following course: the engorgement lasts from twelve hours to three days before the hepatization is complete; the hepatization lasts three days before points of purulent infiltration shew themselves; and from that time until the pus is softened, it varies from two to six days.

This duration of the different stages of peripneumonia must be greatly changed by the mode of treatment, and the first and second stage thereby greatly prolonged. Thus I have seen several instances of the lung remaining hepatized for many weeks.

This, gentlemen, is the description given by Laennec, of the various anatomical conditions of the lung in peripneumonia and gangrene of that organ. It is so perfectly accurate, that I have thought it right to give it almost in his very words.

[A series of preparations and drawings, illustrative of every stage of the disease, were exhibited during the lecture.]

THE ANATOMY AND PHYSIOLOGY OF THE LIVER.

By Francis Kiernan, Esq.

Member of the Royal College of Surgeons, late Teacher of Anatomy.

[Condensed from the Philosophical Transactions.*]

The following pages contain an account of my own investigations of the structure of this organ. The description I propose to give will embrace, 1st, that of the lobules, the manner of their arrangement, their connexions with each other and with the vessels; 2dly, the surfaces of the liver and the distribution of the vessels; and 3dly, the structure of the lobules.

Of the Lobules.—The hepatic veins with the lobules present a tolerably accurate resemblance to the trunk, branches, and leaves of a tree (fig. 1, page 332.) The lobules may be compared to the leaves. The substance of the lobules is arranged around the minute branches of the veins in a manner which may be compared to the disposition of the parenchyma of a leaf around its fibres. The vessels in which the minute veins terminate may be compared to the branches of the tree, and these vessels, by their junction, form the trunks. The hepatic veins may be divided into two classes; into those veins contained in the lobules, and those contained in canals formed by the lobules. The first class is composed of the interlobular branches, one of which occupies the centre of each lobule, and receives the blood from a plexus formed in the lobule of the portal vein. The second class of hepatic veins is composed of all those vessels contained in canals formed by the lobules. Numerous small branches, as well as the large trunks which terminate

* Our condensation of this very elaborate and valuable paper, consists in the omission of certain passages, chiefly containing the opinions of others; but not a word of what we have given is altered from the text of the author.—Ed. Gaz.

in the inferior cava, are included in this class; they all resemble each other in being contained in canals, and they differ from the vessels of the first class, which are contained in the lobules. The intralobular veins terminate in some of these vessels, and not in others; these vessels therefore admit of being divided into two sets; 1st, those in which the intralobular branches terminate; 2d, those in which no intralobular branches terminate. The lobules are arranged around the veins composing the first set, the bases of these bodies resting upon them: they may be called the sublobular-hepatic veins, this term being applied to them merely to distinguish them from the trunks which compose the second set, and on which the bases of the lobules do not rest. The branches of the second set are formed by the junction of those of the first; the canals containing the former differ in the manner of their formation from those containing the latter. Every branch of the hepatic veins contained in the liver belongs to one of these two classes of vessels.

Each intralobular vein is composed of a central vessel, and of from four to six or eight smaller vessels, which terminate in the central vessel. (Fig. 1, *e*, *f*, p. 332.) The intralobular veins invariably correspond in form with the lobules, the substance of which is arranged around them; and as these vessels resemble in some degree the fibres of a leaf, so sections of the lobules made in the direction of the vessels assume a more or less foliated appearance. (Fig. 1, *b*.) The lobules are not, however, flattened bodies like leaves; for, as the smaller veins enter the central vein in every direction, so small processes project in every direction from the lobules, the number of processes being equal to the number of veins terminating in the central vein. The form of the lobules will be now easily understood; their dimensions are known to all anatomists. They are small bodies, arranged in close contact around the sublobular hepatic veins, each presenting two surfaces. One surface of every lobule, which may be called its base, rests upon a sublobular vein, to which it is connected by the intralobular vein running through its centre, the base of the lobule thus entering into the formation of the canal in which the sublobular vein is contained. (Fig. 1, *c*.) The canals containing the hepatic veins may be called the hepatic-venous canals or surfaces; and as the base of every lobule rests on a sublobular vein, it is evident that the canals containing these veins are formed by the bases of all the lobules of the liver. The external or capsular surface of every lobule (fig. 1, *d*.) is covered by an expansion of Glisson's capsule, by which it is connected to, and separated from, the contiguous lobules, and in which branches of the hepatic duct, portal vein, and hepatic artery, ramify. All the lobules resemble each other in their general form, and they are all of nearly equal dimensions; they appear larger when the section is made in the direction of the hepatic veins, and smaller when in the transverse direction. This is most apparent in that state of the liver usually called the nutmeg liver. In a longitudinal section of a lobule, the intralobular vein is seen running through its centre; and if on the surface of the section five of the projecting processes of the lobule be seen, five smaller veins will also be seen, one occupying the centre of each process, and all terminating in the central vein. (Fig. 1, *f*, p. 332.) In a transverse section of a lobule, the divided extremity of the interlobular vein is seen in the centre, and three or four processes of the lobule are seen shooting out in different directions. (Fig. 2, *b*.) The vein being thus always situated in the centre, it sometimes happens that on the surface of a section of the liver, veins are seen in some lobules and not in others: this appearance is caused by the instrument, which, passing obliquely through these lobules, divides some vessels, which thus become apparent, and passes either above or below others.

The superficial differ in one respect from the internal lobules. In the latter, the intralobular veins commence at a certain distance from the surfaces of these bodies, the substance of which completely surrounds them, except at the bases of the lobules, where the veins make their exit to terminate in the sublobular veins. By superficial lobules are meant, not those only which form the convex and concave surfaces, but those also the capsular surfaces of which form the canals containing certain branches of the hepatic duct, portal vein, and hepatic artery, and the canals containing the trunks of the hepatic veins, all these canals being tubular inflections inwards of the superficies of the liver. In all the superficial lobules, the intralobular veins commence immediately at the surfaces; these lobules appearing less perfect in form, or less developed, than those of the interior, or as if their upper portions had been removed, giving to the surfaces of the organ the appearance of the surface of a section. The knowledge of this peculiar form of the superficial lobules enables us, in injecting the hepatic veins, to limit the injection to this system of vessels, which is effected by withdrawing the syringe when the injection appears in minute points on the surface of the liver. If the injection be propelled from the hepatic veins into those portions of the lobular venous plexuses immediately surrounding

the intralobular veins, the first stage of hepatic venous congestion will be simulated: this is effected by withdrawing the syringe when the injection appears in small isolated patches on the surface. The next stage of congestion will be simulated by propelling the injection until the patches partially coalesce, and become continuous with each other; and finally, the appearance of general congestion is produced when the injection passes into those branches of the portal vein which ramify in the interlobular fissures. Occasionally double lobules, or lobules having two intralobular veins, are observed on the surface.

Mascagni, adopting Malpighi's view of the arrangement of the lobules, compares the liver to a bunch of grapes; and this anatomist and Bidloo have represented the lobules appended to the extremities of the vena portæ. As certain branches of this vein first ramify between the lobules, and finally enter them, these bodies may be represented as appended to its extremities: and although every lobule receives branches from this vein, yet a certain number only are clustered around its trunks, with which they have no immediate connexion; whereas the base of every lobule in the liver is in contact with, and connected to, an hepatic vein.

The essential part of a gland is undoubtedly its duct; vessels it possesses in common with every other organ; and it may be thought that in the above description too much importance is attached to the hepatic veins: but relations similar to those which exist between these veins and the lobules, do not exist between the latter and the ducts, or between them and any other set of vessels; nor is there the same exact relation between the ducts and lobules as between these bodies and the hepatic veins; for a lobule with six projecting processes may have three times that number of ducts ramifying on its external surface, whereas the same lobule will have but six minute veins, one in each process, all of which terminate in the central intralobular vein.

Of the Surfaces of the Liver.—The surfaces of the liver are, 1st, the external surface; 2dly, the portal surfaces or canals, at which the vessels enter the organ; 3dly, the hepatic-venous surfaces or canals, at which the vessels make their exit.

Of the external surface.—Examined on the external surface of the liver, the lobules present every variety of form; but in one subject they may all be more or less angular, and in another rounded. They are separated from each other by fissures, which, at the angles of the lobules, dilate into small triangular spaces; they may be called the interlobular fissures and spaces; they contain the interlobular branches of the portal vein, hepatic artery, and hepatic duct, ramifying in a fine cellular tissue continuous with Glisson's capsule, which, with the vessels, constitutes the capsules of the lobules. (Fig. 3, *b* and *c*, p. 332.) When there is but little cellular tissue in the capsules, the lobules are closely compacted together; they are therefore angular in form, and the fissures and spaces are less apparent. (Fig. 3.) Hence it is that these bodies have been described as having six or more sides by Malpighi, Soemmerring, and others. But when the cellular tissue composing the capsules is more abundant, the fissures, and particularly the spaces containing it, are wider and more apparent; the lobules are less closely connected, they touch each other by two or three points only, and consequently approach more or less to the circular or oval form. Hence they have been described as, and present very much the appearance of, convolutions and undulating bands. They are generally angular where they are most numerous, as in the thickest part of the liver; in these parts also they appear smaller, for being arranged vertically to the surface, their extremities alone are seen. At the edges of the liver, where they are fewer in number, and less closely connected, they are rounded; and lying in an oblique or parallel direction to the surface, they appear larger. They are more angular in children than in adults: in some animals, as in the cat, they are always more angular than in others, as in the rabbit, hare, and sheep; their angular or rounded form always depending on the quantity of cellular tissue composing Glisson's capsule. They appear smaller, are more equal in size, and regular in form, on the convex than on the concave surface of the liver, where they are arranged obliquely, the hepatic veins for the most part running nearer to this surface. An intralobular hepatic vein occupies the centre of each superficial lobule. If the extremity alone of a lobule reach the surface, a mere point will be seen in its centre; if a greater portion of the lobule be seen, two or three dark lines will be observed uniting together at a dark point; this point is the central intralobular vein, in which the smaller veins terminate. (Fig. 3, *d* and *e*.) Frequently, lobules with eight or ten projecting processes are found on the surface, each process sending a vein to the intralobular vein running through the centre. It is evident that these superficial lobules are less perfect in form, or less developed, than the internal lobules, in which the veins are wholly surrounded by the substance; and that a superficial lobule with eight or ten processes, is, accurately speaking, half a lobule lying paral-

lel to the surface. Lobules lying parallel to the surface may be always seen on the under and posterior part of the left lobe; such lobules are larger and more numerous in the liver of the sheep, rabbit, hare, and squirrel, than in the human liver. A striking difference will be observed if, in the liver of the sheep, these parallel lobules on the posterior part of the concave surface be contrasted with those forming the lobulus Spigelii. The difference between the superficial and internal lobules is satisfactorily proved by injections. If the hepatic veins be injected with blue size, and the portal vein with red, the blue will be found on the surface of every section, in the centres of the lobules, separated by the substance of these bodies from the portal veins occupying the interlobular fissures. If these lobules were, like those of the surfaces, perforated from one extremity to the other by the intralobular veins, the blue and red injection, or the intralobular hepatic veins and the interlobular portal veins, would, in some places at least, be seen in contact, which is never the case.

The veins and fissures cannot be always seen without the aid of a magnifying glass; slight pressure, however, by which the blood is propelled into them, will generally make them visible. They may be always seen after a few hours maceration in water, or they may be shewn by mercurial or size injections. For this purpose a liver containing the smallest quantity of blood should be chosen; and on this account the liver of the sheep is preferable to the human liver, the latter being generally in a state of congestion. The vena cava should be opened at its posterior part, and the mercury should be poured from a quill into the hepatic vein of the lobulus Spigelii. With slight pressure the mercury will appear in the centres of the lobules, in the form of lines, stellæ, or points, surrounded by what has been called the red substance of the liver. If the liver contain much blood, the experiment may not succeed, for the blood will be propelled to the surface, and the vessels within the lobules will be no longer distinguishable from those between them. If the pressure be discontinued, the elasticity of the vessels will cause the mercury to retreat from the surface; if the pressure be renewed and slightly increased, the mercury will pass from the intralobular branches of the hepatic vein into the interlobular branches of the hepatic vein, and will be seen in the centre and at the circumference of every lobule. If the mercury be thrown into a branch of the portal vein, it will appear in the interlobular branches situated in the fissures and spaces. In the portal veins, which ramify in the cellulo-vascular capsules of the lobules, the mercury will have a dull appearance; it will be of its usual brilliancy in the intralobular veins, which, contained within the lobules, have no cellular tissue surrounding them.

Of the portal canals.—These canals commence at the transverse fissure, where they are continuous with the concave surface of the liver; they contain the hepatic ducts, the portal veins, the hepatic arteries, and the vaginal branches of all these vessels, with the nerves and absorbents, enveloped in a sheath of cellular tissue, first described by Glisson, and called Glisson's capsule. If a longitudinal section of one of these canals be made, and the contents be dissected out, lobules, spaces, and fissures, will be seen, arranged in a precisely similar manner to those already described on the external surface. The lobules forming the parietes of the canals are similar to those of the surface, being, like them, perforated by the intralobular veins; they may be called the portal canals or surfaces, the portal vein being the largest vessel contained in them. These canals, and those containing the large hepatic trunks, are formed by the capsular surfaces of a limited number of lobules; the canals containing the sublobular-hepatic veins are formed by the bases of all the lobules.

Glisson's capsule is not mere cellular tissue; it is to the liver what the pia mater is to the brain; it is a cellulo-vascular membrane, in which the vessels divide and subdivide to an extreme degree of minuteness; which lines the portal canals, forming sheaths for the larger vessels contained in them, and a web in which the smaller vessels ramify; which enters the interlobular fissures, and, with the vessels, forms the capsules of the lobules; and which finally enters the lobules, and, with the blood-vessels, expands itself over the secreting biliary ducts. Hence arises a natural division of the capsule into three portions, a vaginal, an interlobular, and a lobular portion; and as the vessels ramify in the capsule, their branches admit of a similar division.

At the transverse fissure, the duct, vein, and artery, divide into branches, which enter the portal canals. These branches divide and subdivide into smaller branches, which enter smaller canals, and every canal, however small, contains one principal branch of each of these vessels; frequently, however, two ducts and two arteries are contained in the same canal. To these larger vessels the terms of hepatic ducts, portal veins, and hepatic arteries, may be confined, in order to distinguish them from the branches.

The excreting ducts are composed of the hepatic ducts, contained in the canals, of their vaginal branches, also contained in

the canals, and of the interlobular branches, which, arising from the vaginal branches, ramify in the interlobular fissures. The interlobular ducts enter the lobules, in which they form plexuses. These plexuses may be called the lobular biliary, or secreting biliary plexuses, the ducts composing them being the secreting organs of the bile. The excreting ducts and their branches are invariably accompanied by the arteries and portal veins and their branches, the former conveying blood to their coats, the latter conveying it from them: a duct is never unaccompanied by an artery and vein, the vein being always a branch of the portal vein. The veins and arteries also enter the lobules. The veins form plexuses, the branches of which terminate in the intralobular hepatic veins; from the blood circulating through the plexuses, the bile is secreted. The lobular arteries are exceedingly minute, and few in number; they are the nutrient vessels of the lobules, and probably terminate in the plexuses formed by the portal vein. From the ducts, veins, and arteries, therefore, three sets of branches arise, namely, the vaginal, the interlobular, and the lobular branches.

Of the Vaginal Portion of Glisson's Capsule, and of its Vessels.—A branch of each vessel, contained in a portal canal, makes its exit from the canal at each interlobular space on its surface. The lobules being small bodies, the interlobular spaces are necessarily numerous, and close together. The hepatic duct and artery running together on one side of the canal, or winding spirally within it, are in apposition with but a very limited number of spaces; the two vessels are, however, brought into apposition with all the spaces by means of plexuses, from which the interlobular branches arise. The portal vein also forms a plexus, being separated from the spaces by the duct and artery and their plexuses. The branches forming these plexuses are the first which arise from the duct, artery, and vein; they form a vascular sheath around these vessels, and may be called their vaginal branches; they ramify in a loose and fine cellular tissue, which, with them, constitutes the vaginal portion of Glisson's capsule. This cellular tissue is continuous with that surrounding the vessels in the right edge of the lesser omentum, and with that of the proper capsule of Laennec. The internal surface of the cellulo-vascular sheath is in contact with the three principal vessels, and is composed of the largest branches arising from them. Its external surface is in contact with the parietes of the canal, and is composed of the smallest branches; these branches form a reticulated plexus, from which the interlobular branches shoot out, and entering every interlobular space, ramify between the lobules. In the smaller canals, the fissures and spaces being less numerous, and the plexuses formed by the duct and artery being consequently less complicated, a great portion of the portal vein is in contact with the parietes of the canal. In these canals many of the interlobular veins arise immediately from the trunks, vaginal branches being given off, and forming a plexus, on that side only of the canal occupied by the duct and artery. In these canals we find the capsule, the essential part of which is the plexus, only on that side which is occupied by the duct and artery, the vein being in contact on the opposite side with the parietes of the canal. In the larger canals, in which the lobules and spaces are more numerous, and the plexuses necessarily more complicated, the sheath completely surrounds the three vessels. These two modes of arrangement of the capsule may be ascertained by making transverse sections of canals of different calibre. In a small canal in which the capsule is found only on that side occupied by the duct and artery, the portal vein should be laid open, and its internal surface examined. The fissures and lobules will be seen through the transparent coats of the vein on that side on which there is no capsule, and on the internal surface of the vein numerous minute orifices will be observed, corresponding exactly to the interlobular spaces. These orifices are the mouths of interlobular veins, which enter the spaces without contributing to the formation of the plexus. (Fig. 4, *b*, p. 332.) A few larger orifices, not corresponding to the spaces, will also be seen: these are the mouths of the vaginal branches, which divide in the canal into two, three, or more interlobular branches, and thus contribute partially to form the plexus. On that side of the vein which is in contact with the artery and duct, and separated by them from the spaces, the orifices are larger and less numerous; these are the mouths of vaginal branches, which, ramifying in the canal, terminate in interlobular branches, which enter those spaces covered by the duct and artery. (Fig. 4, *c*.)

From the above description it is evident that Glisson's capsule is a cellulo-vascular membrane, composed of the vaginal branches of the duct, vein, and artery, ramifying in a layer of cellular tissue. Its existence around the three vessels in the larger canals, in which the vaginal plexus is most complicated; its existence on that side only of the smaller canals occupied by the duct and artery, and its almost total absence on the opposite side, sufficiently prove that by its means the

three vessels are brought into apposition with all the interlobular spaces on the surfaces of the canals. The vaginal vessels are best seen by making longitudinal sections of canals, and dissecting out the three large vessels after having injected them. The mouths of the interlobular branches arising from the smaller portal veins may be shown by opening a vessel, and removing the injection carefully from the trunk, leaving it in the branches. The internal surfaces of the ducts and arteries exhibit no orifices of interlobular branches, these branches always arising from the plexus which each duct and artery, however small, forms in the canal in which it is contained. The portal vein, like other vessels, occasionally varies in the manner in which it gives off its branches; thus, even in the smallest canals, it frequently happens that the three vessels are surrounded by the capsule. In this case the vein gives off vaginal branches only, and no interlobular branches, all the latter arising from the former.

The first vaginal branches of the ducts arise at nearly right angles with the trunks; they run in a transverse direction within the inner surface of the canal, and terminate in branches which correspond to, and lie on, the fissures. Each transverse branch gives off one or two branches which ramify in the direction of the trunk, and one or two recurrent branches. All these branches run in the direction of the fissures, forming angles at the spaces over which they pass. At each angle a smaller branch is given off, which runs on a fissure leading from the space over which the angle in the vessel is formed. Thus, if the vessels be well injected, all the fissures and spaces will be covered by small ducts, which form a network of vessels corresponding in form to the fissures on which they lie. The transverse branches, and those which arise immediately from them, do not anastomose with each other, but the smaller branches sometimes appear to do so; I cannot, however, from dissection, affirm that they do, for those which appear to anastomose are exceedingly small vessels, and meet each other at the spaces; hence it is difficult to ascertain whether they really anastomose, or enter the space together without anastomosing. From the vaginal ducts spread over the surface of the canal, lobular and interlobular ducts arise; the former enter the lobules on the parietes of the canals; the latter leave the canals at the spaces to ramify between the lobules, which they finally enter. The vaginal ducts are sometimes very tortuous in their course.

The coats of the ducts are highly vascular; the rugæ on their internal surface, and those on the internal surface of the gall-bladder, are formed by the ramifications of the larger blood-vessels, arteries as well as veins, covered by the mucous membrane. This membrane is studded with vascular papillæ, which become remarkably developed in the diseased ducts so frequently found in sheep and oxen. The smaller ducts are furnished with papillæ only, and to the rupture of the delicate vessels forming these papillæ is to be attributed the facility with which Soemmerring and other anatomists injected the ducts from the arteries and veins, and not to any direct communication between the vessels and the ducts. The ducts cannot be injected in a direct manner from the hepatic vein, no branches of this vein ramifying in their coats; fluid may indeed be made to pass from this vein into the ducts, but only through the medium of those branches of the portal vein which ramify in the coats of the ducts. The ducts are injected from the portal vein and from the hepatic artery in the same manner as the fœtal intestine is frequently filled with injection from the umbilical vein or aorta, viz. by the rupture of the minute vessels of the mucous membrane. Hence it is evident that the ducts, so far as they have been yet traced, are abundantly supplied with arterial blood; that this blood returns into the branches of the portal, and not into those of the hepatic veins; and that the hepatic portal vein has branches of origin in the coats of the excreting ducts from the terminations of the hepatic artery, as the abdominal portal vein arises in the coats of the intestines, in the spleen and pancreas, from the arteries of these organs.

From their extreme vascularity alone, we might infer that the ducts serve another purpose beside that of conveyance of bile; and all anatomists are acquainted with the muciparous follicles of the lining membrane of their larger branches: in the smaller branches, the existence of the follicles has been denied. In the former, they are irregularly distributed over the surface; in the latter, they are closely arranged in two longitudinal lines, occupying opposite sides of the ducts; and, arranged in this manner, they will be found in the smallest duct that can be examined. Mappes confounded the follicles with the orifices of vessels. Their number renders it probable that the fluid furnished by them serves another purpose beside that of lubricating the surfaces of the ducts. Some estimate of the quantity of this fluid may be formed by examining the ducts, after having injected them with alcohol. These follicles are probably the secreting organs of all the mucus found in the bile.

The vaginal ducts are accompanied by the vaginal arteries; the latter, however, are more or less tortuous in their course, the former generally proceeding in the shortest direction to their destination. The vaginal arteries anastomose freely with each other, but their ramifications do not, like those of the ducts, correspond exactly to the fissures. If the left artery be injected in the transverse fissure, the injection will return by the right artery: this communication takes place by means of vaginal branches which the left artery gives off in the fissure, and which anastomose with similar branches of the right artery.

The vaginal branches of the vein anastomose with each other; they form a much more complicated plexus in the human liver than in the liver of most animals, and on this account the cellular tissue of Glisson's capsule is more abundant in the former, and greater difficulty is experienced in examining the plexuses formed by the ducts and arteries. In the sheep, portal veins of considerable size resemble the smaller portal veins in the human subject, vaginal branches arising from them on that side only of the canal occupied by the duct and artery, and interlobular branches on the other side. On this side, therefore, we find the cellular tissue in small quantity, no venous plexus being formed, and the injected vaginal ducts and arteries may be seen without dissection through the transparent coats of the vein.

The nerves and deep-seated absorbents ramify in the portal canals; I have not been able to trace them into the interlobular fissures. The absorbents may be always injected from the duct, and the bile is frequently propelled into the former vessels by injecting the latter. Mascagni found that injection thrown into the ducts returned colourless by the absorbents. I have frequently made the same observation, but I have as frequently found the injection in the absorbents of the same colour as that thrown into the duct, and have frequently filled all the absorbents of the right edge of the lesser omentum with red size from the duct. No absorbents accompany the hepatic veins, and it is not probable that any of the absorbents of the liver terminate in the branches of the portal vein, the fluids in these two systems of vessels proceeding in different directions. The superficial absorbents ramify in the proper capsule. After injecting these vessels, the peritoneal coat may be removed without injuring them; or the peritoneal coat may be first removed, and the absorbents afterwards injected; and some few may be injected in the proper capsule after the separate removal of both. This can be done in the human subject and in the larger animals only, the proper capsule being of a much more delicate structure, or probably not existing, in the smaller animals, in which the liver appears to have no superficial absorbents. Injection sometimes passes from the arteries and portal veins into the absorbents.

Of the Interlobular Portion of Glisson's Capsule, and of its Vessels.—As the interlobular ducts, veins, and arteries, arise from the vaginal ducts, veins and arteries, so the interlobular cellular tissue is continuous with the vaginal cellular tissue, the vessels and cellular tissue together constituting the interlobular portion of Glisson's capsule, which occupies the fissures, and forms the capsules of the lobules. The interlobular vessels, at their origin from the vaginal vessels, enter the spaces; in the spaces, therefore, we find the largest branches; these divide into smaller branches, which ramify in the fissures.

If the left hepatic duct be injected with size or mercury, the injection will return by the right duct, without extravasation and without passing into other vessels, and the injection will be found in the interlobular and vaginal ducts as well as in the trunks. This communication between the two ducts does not take place, like that which exists between the right and left arteries, through the medium of the vaginal branches of the transverse fissure, the injection being found in interlobular branches arising from the right duct. From this experiment, which I have frequently repeated with the same result, it appears that the right and left duct anastomose with each other through the medium of the interlobular ducts. This experiment does not always succeed, which probably arises from the quantity of bile contained in the ducts.

The interlobular branches of the portal vein cover, with their ramifications, the whole external surfaces of the lobules, with the exception of the bases of these bodies, and of those extremities of the superficial lobules which appear on the surfaces of the liver. The freest communications take place between these vessels; when successfully injected, which can be done with size only, the interlobular fissures in which they are contained, whether examined on the surfaces of the liver, or on the surface of a section, are coloured with the injection. Mercury thrown into a large branch of the portal vein returns by other large branches. This communication takes place through the medium of the interlobular branches, for though the vaginal branches in the same canal anastomose freely with each other, yet those of one canal communicate with those of another through the medium of the interven-

ing interlobular branches alone. The interlobular veins also form communications between the lobular veins of a lobule, and those of the contiguous lobules. Hence it appears, contrary to the assertions of Bichat and Mappes, that the freest anastomoses exist between all the branches of the portal vein, and that the interlobular branches form the medium of communication.

When the portal vein is imperfectly injected, and the venous circles, formed by its interlobular branches around the lobules, are not brought into view, these branches are seen in the spaces, and three or four smaller branches are seen shooting into the fissures communicating with the spaces. These are the stellated vessels of anatomists. When the vessels are well injected, the stellæ are all continuous with each other, and the venous circles are formed; the stellated appearance, therefore, arises from the incomplete injection of the vessels. If the liver do not contain much blood, stellæ may be always produced on its surfaces by pressure.

No anastomoses can be shown to exist between the interlobular arteries, these vessels, even when most successfully injected, appearing like points, lines, and stellæ, in the fissures and spaces. The right artery may be injected from the left in the transverse fissure, and it has been shown that this communication takes place by means of the vaginal branches given off by the two arteries in the fissure; but if the left artery, or a branch of it, be injected at its entrance into its canal, after the vaginal branches of the fissure are given off, the injection will not return by the right artery. From this experiment it would appear that no anastomoses take place between the interlobular arteries; but as the vaginal arteries communicate freely with each other, and as the interlobular ducts also communicate with each other, and as the arteries ramify in the coats of the ducts, we may conclude that the interlobular arteries anastomose.

From the superficial interlobular fissures, small arteries emerge and ramify in the proper capsule on the convex and concave surfaces of the liver, and in the ligaments. These are the capsular arteries. They vary much in number in different subjects, being always most numerous in those in which the capsule is most developed. In those animals in which the liver has a peritoneal coat only, and no proper capsule, no capsular arteries can be shown by injection. In those subjects in which the capsular arteries are numerous, these vessels cover the surfaces of the liver with a beautiful plexus: those of the right lobe anastomose with those of the left, and both anastomose with branches of the phrenic, internal mammary, and supra-renal arteries; some, leaving the liver, ramify under the peritoneum covering the right kidney; others pass along the ligamentum teres to the umbilicus, and anastomose with the epigastric arteries.

All the capsular arteries, arising from whatever source, ramify in the proper capsule, and they may be all injected from the hepatic artery. I have never seen injected vessels in the peritoneum, but as recent adhesions between the liver and diaphragm may be injected from the hepatic artery, it appears evident that the peritoneal coat of the liver is nourished by this artery. That the proper vessels of the liver anastomose with those which Walter calls the proper vessels of the membrane, is proved by the fact, that recent adhesions between the right lung and the diaphragm may be injected from the hepatic artery, the injection passing from the capsular branches of this vessel into those of the phrenic, and thence into the phrenic arteries themselves. The capsular veins are branches of the portal vein; these vessels communicate freely with branches of the phrenic veins. In some cases of atrophy of the liver, and in cases in which the circulation through the liver has been for some time obstructed, a collateral circulation is established by means of the communications which take place between the capsular branches of the hepatic artery and portal vein, and those of the phrenic artery and vein.

All the *vasa vasorum* of the liver are branches of the hepatic artery and portal vein. Branches of the artery ramify in the coats of the duct, artery, and portal vein; veins arise in the coats of all these vessels, and terminate in branches of the portal veins. In the hepatic-venous canals, and in the fissure of the inferior cava, small arteries issue from the interlobular fissures, and ramify in the coats of the hepatic veins and inferior cava: veins arise in the coats of these vessels, and entering the interlobular fissures, terminate in branches of the portal vein. All the veins arising in the coats of the vessels, and terminating in the portal vein, constitute the hepatic origin of this vein.

The trunks of the duct, vein, and artery, in each canal, terminate in interlobular branches. Vaginal vessels, giving off interlobular vessels, ramify in the transverse fissure, in the fissure of the gall-bladder, and in that containing the obliterated umbilical vein and ductus venosus; these fissures, therefore, must be considered as portions of portal canals.

[To be continued.]

Fig. 1.

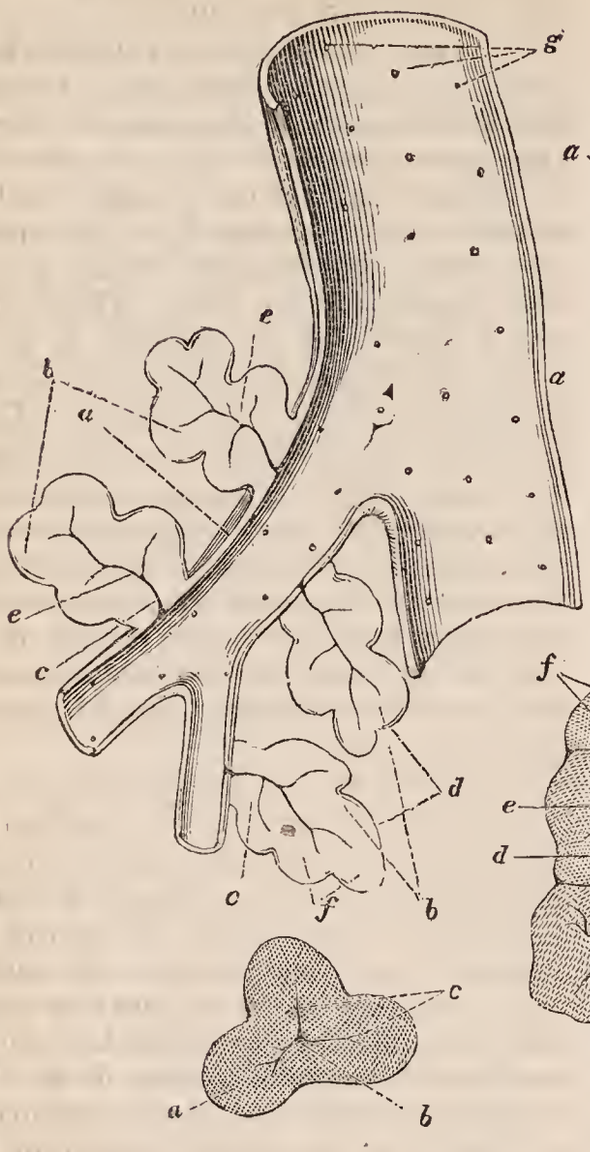

Fig. 2.

Fig. 3.

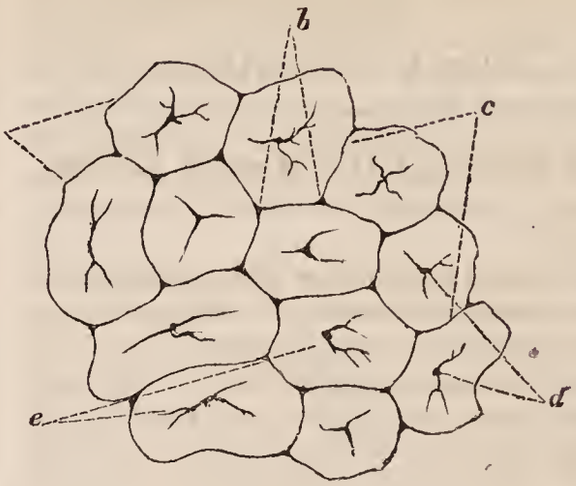

Fig. 4.

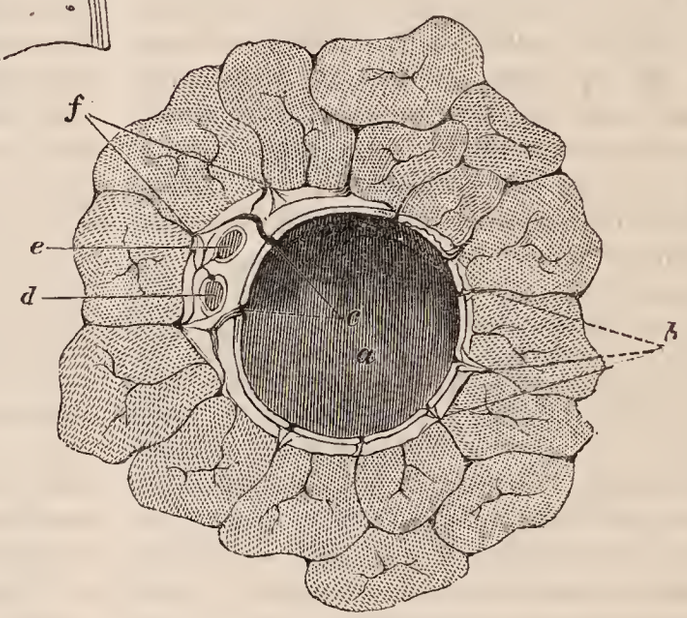

Fig. 1. A longitudinal section of sublobular-hepatic veins, with lobules arranged around them.

A, A. Sublobular-hepatic veins.

B, B. Longitudinal sections of lobules, presenting a foliated appearance.

C, C. The bases of the lobules resting on the sublobular veins, and forming the canals containing them. The bases of the lobules are connected to the sublobular veins by the intralobular veins.

D. The external or capsular surfaces of the lobules.

E, E. The intralobular veins running through the centres of the lobules.

F. The projecting processes of the lobules, with their veins terminating in the central vein. The intralobular veins correspond in form with the lobules, the number of smaller veins being equal to the number of processes.

G. The mouths of intralobular veins opening into the sublobular veins.

Fig. 2. A. A transverse section of a lobule.

B. The divided central intralobular vein.

C. The smaller veins, terminating in the central vein.

Fig. 3. A. Angular lobules in a state of anæmia, as they appear on the external surface of the liver.

B. The interlobular spaces containing the larger interlobular branches of the hepatic duct, portal vein, and hepatic artery.

C. The interlobular fissures, in which the smaller interlobular branches of the hepatic duct, portal vein, and hepatic artery, ramify.

D. Intralobular veins, occupying the centres of the lobules.

E. Smaller veins, terminating in the central veins.

Fig. 4. Represents a transverse section of a small portal canal and its vessels. The lobules are in a state of general congestion.

a. The portal vein, a great portion of which is in apposition with the interlobular spaces on the parietes of the canal.

b. The interlobular branches arising from the trunk and entering the spaces, with the branches of the duct and artery, without ramifying in the canal. On this side the vein resembles an hepatic vein, in having no vaginal branches.

c. Two vaginal branches arising from the vein, and dividing into interlobular branches on that side of the canal on which the vein is separated from the spaces by the duct and artery. On this side, the vein, giving off vaginal branches, and being separated from the parietes of the canal by the capsule and vessels, resembles the larger portal veins.

d. The duct giving off vaginal branches.

e. The artery giving off vaginal branches.

f. Three vessels, a duct, vein, and artery, entering each interlobular space on the surface of the canal.

OBSERVATIONS ON THE NATURE AND ORIGIN OF THE DISEASE CALLED PLICA POLONICA.

To the Editor of the Medical Gazette.

Sir,

It is singular that in the present advanced state of medical science, any doubts should exist respecting the nature of a disease which, from its circumscribed influence, has received the name of plica polonica; still, even at the present moment, the medical opinion is divided upon the reality of its existence, as a specific complaint. This discordancy of opinion is not confined to strangers, or to those medical men who, not having sojourned long in the country where the disease is endemic, have had but little opportunity of investigating the matter, but the medical men resident in those parts where it it is most prevalent, do not seem, as far as I could ascertain it, to have made up their minds upon the subject.

There are three opinions, however, which may be quoted regarding the nature of this affection.

The first, and a very general one, that the said plica is nothing more or less than an aggregation of filth.

The second, a very limited one; that it is a specific contagious disease, produced by a peculiar virus.

The third, and the more probable one, that it is a secondary affection, or a critical excretion from the scalp and roots of the hair, and the natural curative process of a variety of complaints.

Several reasons may be assigned for the discrepancy of opinions which exist upon this subject, and which place it among real or artificial diseases. It is in general confined to the lowest orders of society. Such excite little interest or compassion; and their modes of life, which place them, as regards cleanliness, even below many of the brute creation, have acted as an insuperable barrier to the thorough investigation of this disease upon those spots where it is endemic.

When it attacks, on the contrary, the better classes of society, it is studiously concealed from the world in general, and often from the medical attendant; unless, having resisted all nostrums, it becomes too aggravated in its character to be trifled with any longer.

The same cause has operated in both cases, to prevent sufficient attention having been paid to it in all its stages. The peasant is too filthy to be attended to; the rich man is too proud to allow himself to be suspected of labouring under the curse of that which is the fitter property of his boor. Hence it is that so little real information is to be gained from the number of authors who have written upon this subject. Each has contented himself with re-stating or criticising some preceding opinion upon the disease; few have taken the trouble to investigate the truth, by observing simply with their own eyes what lay in their daily path. So we are told of the errors into which Hercules de Saxonia fell, from his too great belief in supernatural agents.

Davidson, on the other hand, is reprobated for his scepticism; Schlegel is too diffuse; Gasc too concise in his description; but the authors of these criticisms do not think of telling us what they saw themselves. To unfold a plain unvarnished tale, must be left, I believe, to the Ghost of Hamlet; for no one living seems disposed to do it. We find that not only the real existence of the disease is a matter of contention, but its origin and progress are equally twisted, like itself, from the path of truth, by those who believe in its existence. Its name and numerous synonyms indicate a great difference of opinion as to its origin and effects.

First, as to the opinion of many, that it is only an aggregation of filth.

I have myself known it occur in five opulent families, where any question of uncleanliness could not for a moment be agitated; and this is itself sufficient to disprove the validity of this sweeping clause.

Having previously to my visiting Poland read several works upon the subject, and found them abounding in controversy and confusion, I was in hopes that during my residence in the ancient capital of the Piasts, I might gain some clearer evidence upon the matter. Being convinced, from what I have already stated, that uncleanliness alone could not account for all that I found to exist, it became nevertheless necessary to ascertain how far this operated as a cause, knowing that cause

and effect are often so blended together, that it is difficult to separate them.

Here arose a stumbling block at the threshold of inquiry; and it was necessary to refer to popular prejudices, not as a standard of truth, but as a standard of error, from which truth may often be elicited. I found that there was but one opinion held by the people regarding the effects of the disease, how diverse soever their opinions might be as regarded its causes. All agree that the effects of the plica are most salutary to the system; and there are few earthly blessings which are more coveted by the peasant than the formation of a plica in his hair. Two circumstances meriting attention are to be considered, as arising from this opinion—the one, that relief is afforded to the system under certain morbid states by the formation of a plica; the other, as a necessary consequence, that means will be devised to promote its formation. From these two circumstances arise also a very important subject for consideration, viz., that the methods frequently resorted to, in order to promote this effect, have tended to establish the opinion, that the disease is at all times an artificial production. It is said to be good for the ague, for the gout, for sore eyes, for obstinate headaches; and females find it good for a variety of complaints: consequently, as soon as they are afflicted with any of these grievances, they immediately commence forming an artificial plica. Of this I have positive proof in the following instance.

I was requested to see the daughter of a person in very easy circumstances, who was affected with sore eyes, and had a defect in her vision. She was about fourteen years old, and was, when I first saw her, lying upon the bed: her hair was twisted and matted together, and the *animals* in such quantities that I could not approach her without feeling disgust. She had a speck upon one cornea, and seemed to be suffering from rheumatic ophthalmia. Upon inquiring why she was confined to her bed, and if she had the plica, her mother replied not as yet, but she was in hopes that it would not be long in coming; for which purpose her daughter was kept as warm as possible. "For the same reason, I suppose, you do not allow her to comb her hair, or keep her head clean?" "Yes," was the reply. "And what do you expect will be the consequence?" "A plica will form in her hair, and cure all her complaints." "Will her eyes get well as soon as the plica is formed?" I inquired. "No, not immediately; but as the head gets worse, the eyes will by degrees get better, and when once cured, she will never be subject to have sore eyes again." "How long will this plica last?" I inquired. "About three years," was the reply. "And what then?" "The old hair will die away, new hair will shoot out from the scalp, and then we shall cut away the old by degrees, and she will have a fresh head of hair."

All this information was founded upon the experience of the mother, whose son had suffered, some years previously, in the same way, and was cured by the same means.

Some days later, I visited the public hospital. In passing by one of the beds, I observed an old woman, whose head appeared enveloped in the remains of a flannel petticoat. I inquired what ailed her. The interpreter replied, Koltun, the name given to the disease by the people. I was anxious to examine it myself; the attendant replied, that it was not as yet fully formed, but that she was encouraging it all in her power, and so wrapped up her head in flannel. I inquired why she was so anxious to produce a plica. "The old woman is a martyr to rheumatism, and this is an infallible cure for it — the universal remedy," said the young surgeon who interpreted for me. In the meantime she had taken the wrappings off her head, and I found the hair all twisted together, and very *lively*, as I had observed it in the other patient. The plica was much farther advanced in this latter case. The mass of hair upon the crown of the head resembled a dirty bird's-nest; but upon examining the hairs individually, I could perceive no alteration in their structure. Such a plica might evidently be produced at any time, and as easily in Cork as in Cracow. The old woman was much displeased at being obliged to undo her flannel wrapper, from fear of the exposure to the air retarding the progress of the disease.

These two cases sufficiently prove that means are resorted to in order to produce an agglutination and conglomeration of the hair, for the purpose of

relieving the system of some painful affection; and this forms the false or artificial plica. This is considered by many as the only disease; and when so many cases can be traced to this and this alone, it is not singular that with many farther investigation is not considered necessary.

The following case, which occurred to a servant girl in the family of Dr. Typaldoes, an amiable Greek physician, then residing in Cracow, illustrates the relief afforded to the system by the spontaneous appearance of a plica, when no artificial means had previously been used to produce it. She had been afflicted for several months with violent pains in the head, which resisted all medical treatment. As the winter approached, the headaches got worse and worse, and during the night were quite insupportable. In the month of January, the thermometer being 22° Reaumur, she left her bed, and went down stairs to get ice to put upon her head. She caught a severe cold by this imprudence, and a fever, with delirium, was the result. The usual means were employed to combat the fever and head affection, but nothing succeeded, till suddenly a plica formed itself upon the scalp; and she gradually got better as the plica increased.

In such a case, the old term *vis medicatrix naturæ* seems to establish a claim upon our attention.

It is natural to ask if the plica formed in this spontaneous way, differed in appearance from those which I have described, and which were artificial productions. I cannot reply to this from my own ocular evidence, but Dr. Typaldoes informed me that it was a true plica, for that the structure of the hairs was altered; but the patient immediately resorted to the same artificial means of promoting its increase as the others had done to favour its production in their cases: so that even in this case it soon became impossible to unravel truth from falsehood.

I shall explain what is considered to be the difference between the real and false plica as briefly as possible; but I shall first mention a few circumstances, which may puzzle many who uselessly devote their time to read all the different authors who have written upon this malady.

First, as to the various names given to it by different writers.

A good deal is to be learnt from this variety of appellations, most of which express some supposed or real character in the complaint itself; and first, of the popular name of Koltun, which signifies a stake, because the hair stands out like a pole, or stake. This implies no matting of the hair, as a Medusa's head; no interlacing of the hairs in meshes; but a thickening of the hair, either from conjunction of several hairs in a straight direction, or from a thickening of individual hairs; and many have drawn a distinction between the true and false plica, from the disposition of the hairs alone.

When it affects other parts of the body than the head, this is the form which it is said always to assume; and we read of cases where it has increased to such a length as to pass three times round the thigh. The vulgar name koltun is not to be disregarded in the investigation of the nature of this disease.

The following name I shall quote as offering one of the many difficulties which occur in the study of this malady.

Plica judaica, Judenzopf, are commonly met with in writers, and yet I was informed by my colleagues, in Cracow, that the plica was rarely to be met with among the tribes of Israel. If such be the case, it affords negative evidence, at least, to the opinion that this malady is engendered by filth alone; for if there is a mass of living filth in human shape, it is to be found in a Polish Jew, who stalks up and down the streets in a long gown, and fur cap upon his head, nor changes his gabardine till it falls piecemeal off his body, rotted by age. His long flowing hair, falling in ringlets upon his shoulders, and curling at the extremity, would seem to offer a fine nursery for plica: still, as I was informed, he is seldom attacked by this disease, but enjoys, as a substitute more generally diffused over his body, the psoriasis. It was not asserted that no cases are to be found among the Jews of this malady, but that there were but few, comparatively with the peasants. I recollect seeing but one Jew affected with plica, during the time I remained at Cracow.

Another name, and one indicative of its locality, is Weichzelzopf; because it is found to prevail especially on the banks of the Vistula, and the popular tradition runs, that when the Tartar

hordes came over the Carpathian mountains, and invaded Poland, they poisoned the sources of this river.

In the name of Mahrenflechten is expressed that the Moravians, when enemies to Poland, had recourse to magic to conquer them, and gave them this unseemly complaint. So witchcraft is likewise expressed in Hexenzopf.

Thus much for nomenclature; and as to locality, I can only state what I have myself observed. This is, again, a much disputed point; some asserting that it is confined entirely to Poland, others that it is to be found sporadically scattered over Hungary and many parts of the north of Germany. Mr. Russell says "it is found in Livonia and some other parts of Russia, and, above all, in Tartary."

I found it prevalent in the republic of Cracow, in the kingdom of Poland, and in the whole province of Gallicia, along the banks of the Vistula. In quitting this river, I lost sight of the disease, nor did I find any traces of it during some weeks' sojourn in the Ukraine and in the province of Podolia, as far down as Odessa.

I have never seen a single case in Russia proper, nor even in Finland; which all coincides with what others have written upon the subject.

Such evidence must go far to prove that filth cannot be the only source of this complaint. Some stray cases may occur in other countries bordering on Poland, but in none that I have mentioned is it a disease of the country.

Another point of controversy is with respect to the disease attacking strangers. Some assert that strangers are not susceptible of it; others, that they only become so when they adopt the costume of the country: both these opinions are erroneous. An instance of the contrary occurred in the family in which I was residing. A lady's maid, who came from Berlin, to attend the Countess ——, was very seriously attacked with this complaint: it commenced by headaches and general rheumatic pains, and finally terminated in plica. Now this young woman, from the middle class of society, had not been more than six months in the family, and had adopted no national costume. I know not what may have been the dress of a lady's maid in the time of the Casimirs, but at present, I believe, it is the same over Europe in general.

Neither, therefore, are strangers free from it, nor is it produced by dress alone.

Some have stated that the disease is contagious; but this opinion is combated by one of the earliest writers — viz. Hercules de Saxonia, who published in 1600, and from whose book much is to be learnt. He is quite furious at the idea, and instances, in incontrovertible evidence to the contrary, that a learned professor, of his acquaintance, was afflicted with it to a grievous extent, but his barber, who shaved him and dressed his plica, did not catch the disease. This author does not believe that the plica is ever epidemic, although he has great faith in sol-lunar influence and the aspects of the heavens upon complaints in general. As to its endemic character, he can point out the spots where it is to be found at all seasons of the year.

Mr. Russell has fallen into error upon this subject. He says that "it is contagious, and moreover may become hereditary. In Cracow there is a family, the father of which had the weichzelzopf, but seemed to be thoroughly cured of it; he married shortly afterwards, and his wife was speedily subjected to the same disorder, and of the three children she bore to him, every one inherited the disease."

Had the author stated that the complaints which engendered plica are hereditary, he would have been nearer the mark; but neither cause nor effect, in this case, can be considered contagious.

With respect to its affecting the brute creation, the opinion is generally in favour of this idea. Pigs and horses are particularly subject to it. Schlegel is of opinion that it is so prevalent among horses, that one out of six is attacked by it, both in Moscow and Petersburgh; a privilege which the cattle enjoy over the people in these capitals. Six years' residence in the latter city, and a considerable acquaintance with horse-flesh, have not yet introduced to me the disease in that animal.

In travelling from Cracow to Leopold, I observed that the manes of the peasants' horses had a peculiar appearance, and that the pigs were much in the same predicament. The postilions informed me that it was the koltun. Upon close examination, however, I could not convince myself but that a comb would unravel it, if regularly applied. It is too much, however, to expect that

a man should comb his horse who never as yet combed himself.

I shall not dilate more upon the controversies which are to be found in the different works upon this subject: many of the writers are not only at variance with their colleagues, but even with themselves. Few describe what they have themselves seen, or the results of their own study and observation. From what has been said, I think it will be evident that the two first opinions—viz. that the plica is nothing but an aggregation of filth; and, secondly, that it is a contagious disease, depending upon a peculiar virus—are neither of them tenable. The third, or that which allows of its existence, as a critical termination of other complaints, is alone worthy of attention. We do not say, however, that in no instances the hairs may not be affected primarily, but that the disease is not capable of being propagated by contagion, or that the virus can be communicated by inoculation, as many have contended.

G. W. Lefevre, M.D.
Physician to the British Embassy.

St. Petersburgh,
September 1834.

CASES OF

SYPHILITIC SORE RESEMBLING CONDYLOMA.

To the Editor of the Medical Gazette.

Sir,

I take the liberty of sending you the reports of two cases, which I hope you will deem worthy of insertion in your widely-circulated journal. Both are the subjects of sores so perfectly resembling simple incipient condylomata, that their nature could not have been detected as differing from them, were it not for their occurring singly, and in situations uncommon for condylomata, and their not disappearing under remedies ordinarily employed for their removal. It would appear as if they originate in the form of a very superficial ulcer, which, though soon cicatrizing, is attended with a diffused but circumscribed induration of the substratum, which, even after the process of cicatrization is effected, increases in depth, (perhaps by increased deposition on their summit, thus becoming more elevated, and at the same time flatter on its surface), but retains the circular form; at least this was the impression given me by the appearance presented on admission, in the first of the cases here subjoined; and although no appearance of ulceration presented itself in the second case, I attribute this to the circumstance of my not having seen the patient in time to observe the sores in that early stage; and am inclined to consider them as indurated bases of recent sores, though elevated and circumscribed as they were, so resembling the common condylomata. But, without reasoning at all, the history of the cases will not allow us to call them condylomata, as they began with, or immediately followed, the appearance of the gonorrhœal discharge, the constant and continued irritation of which it is that gives rise to the latter complaint. The true syphilitic nature of this *condylomoid chancre*, if I may so denominate it, is perhaps confirmed by the induration immediately subsiding under the influence of mercury, and not before.

If I be correct in the notion I have expressed, regarding the nature of this affection, it is of the first importance that its existence should be recognized, that no unnecessary delay may occur in the exhibition of that remedy which is necessary for its perfect removal, and to counteract the effects which may result from it; but perhaps the knowledge of such a form of sore is of equal importance in enabling us to reconcile cases which have at times been recorded, of secondary eruptions appearing after condylomata.—I am, sir,

Your obedient servant,

Thomas Peregrine, M.D.
House-Surgeon.

Lock Hospital, Nov. 30, 1834.

Case I.—Ann Eldridge, æt. 16, admitted September 11, 1834, under Mr. Walker.

Little thick yellow discharge from vagina, with vascularity generally, and here and there tendency to excoriation of its orifice. At the inferior commissure of the vestibulum is a small circular ulcer, with slightly elevated edge, yellowish surface, but bearing a few small red granular points. Left labium slightly swollen; behind its inferior extremity is a circular, hard, and elevated lobular swelling, with scabby surface, presenting the appearance of a *syphilitic sore*, nearly healed, and leaving considerable induration of its base.

Has also bubo in either groin, above Poupart's ligament, large, solid, and painful, but no redness of the skin. Health very good; bowels confined; catamenia regular.

Has had her complaint two weeks. She gives but an imperfect account of it: says that the bubo was the first symptom that she perceived; that the discharge appeared only one week ago; and that the sore in the vestibulum came about the same time; that she has had the swelling of the labium also a week; and the sore behind the lower extremity of the labium she did not notice before to-day.

Has not taken any medicine; she lives temperately, although she has been on the town three months. No previous venereal disease.

H. Sennæ, cras mane; Lotio Saturni, pro lotione, et injectione; Dieta è jusculo.

Sept. 15th (4th day).—

Hyd. Sub. gr. ij.; P. Ant. gr. vj. hac nocte sd.; H. Sennæ, cras M. sd.; Hirudines, vj. utrique buboni et postea Catapms. Lini. applic.

17th (6th day).—Buboes smaller, and much less painful.

Lotio Muriatis Ammon. bubonibus; Lotio Nigra ulceri Vestibulo.

28th (9th day).—

Emplastrum Lyttæ buboni sinistro. Rept. H. Sennæ.

25th (14th day).—Discharge diminished; much less vascularity of vestibulum; sore at its inferior part nearly healed. The lobulated induration before noticed on the outside of the lower part of the labium much the same. A similar indurated swelling, or hardened circular tumor, is to-day noticed on the left side of the preputium clitoridis. Buboes dissolving. Has felt ill the last two days; is complaining of pain in the side and in the knees, which are worse at night.

H. Sennæ stat; H. Salin. cum Ant.Tart. 6tis horis.

29th (18th day).—Ulcer in vestibulum healed. Eruption noticed to-day on the thighs, of a tubercular character, with very faint brownish stain. Feels quite well again in health.

Oct. 2d (21st day).—The indurated circular swellings noticed on Sept. 25th, in statu quo.

4th (23d day).—

Pil. Hydrarg. gr. v. bis quotid. Dieta ordinaria.

10th (29th day).—Vaginal discharge decreasing. The induration of the lobular tumors has very much lessened since she has been taking the blue pill; eruption dying away; throat vascular and tender.

Gargarisma Boracis. P. c. Pil. Hydrarg. bis indies.

16th (35th day).—Improving rapidly; gums vascular and tender.

30th (49th day).—Vaginal discharge stopped for the last two weeks; buboes quite gone; indurated lobule on the outside of the labium disappeared—that on the preputium nearly so; stain of eruption only now remaining; throat well, but disposition to thick secretion. Three soft vascular syphilitic tubercles are seen at the back of the neck, inclined to desquamation: did not notice them before three days ago.

P. c. Pil. Hydrarg. bis indies.

Made out-patient, at her own request.

Case II.—Charlotte Godwin, æt. 18, admitted Sept. 18, 1834, under Mr. Briggs.

Irregular excavated ulcer, occupying the inferior part of the vestibulum, inclined to heal; surface yellowish, but studded here and there with incipient red granulations. Margin elevated and rounded; thickening of the surrounding parts. Œdematous swellings of nymphæ, which protrude considerably between the labia; much vascularity of orifice of vagina, with thin yellowish discharge, and slight ardor urinæ. *Condylomatous deposits** on the margin of the left labium; health tolerably good; tongue furred; eyes suffused; catamenia regular.

Her complaint began with scalding in micturition two weeks ago; the condylomatous swellings appeared about the same time. The discharge she did not particularly notice till nine days ago; swelling of nymphæ five days. Was not aware of the existence of the sore in the vestibulum.

The previous treatment has not done any thing material.

Is a cook in a private family, so that

* These are the words in my case-book, and entered immediately after the patient's admission, when I was not aware of their nature.

she has always lived regularly. No previous venereal disease.

Haust. Sennæ, cras mane; Lotio Sat. Dieta è jusculo.

22d (4th day).—Has a feverish attack; is just recovered from her catamenia, which have been more profuse than ordinary. Sore has become very painful, and assumes somewhat of a greyish aspect, and inclined to spread.

Hyd. Sub. gr. ij.; P. Rhei. gr. vj. stat. sd.; H. Salin. cum Ant. Tart. gr. $\frac{1}{6}$; Mag. Sulph. ℈ij; Tr. Hyoscyami, ♏xxv. 6tis horis sd.; Lotio Nigra ulceri, cum Cat. Lini.

24th (6th day).—Is very much better to-day. Swelling of nymphæ considerably subsided; ulceration inclined to heal; margin decidedly thickened; much less vascularity of vestibulum.

Beef-tea and pudding.

30th (12th day).—Very much improved; swelling of nymphæ entirely gone; ulcer now quite clean, and granulations sprouting on the surface.

Omit. H. Salin. Magnesiæ Sulphatis, 3ij.; Magnesiæ Carbonatis, ℈j.; Aq. Fontanæ, gr. iss.; Omni mane sd.; P. cum Lotione Nigra ulceri, et Lotione Saturni pro injectione.

October 9th (21st day).—Vaginal discharge stopped three days; ulcer very nearly healed.

14th (26th day).—Ulcer just healed; condylomatous deposits before noticed undiminished, remaining in the same state as on her admission, though the goulard lotion has been kept constantly applied: they appear precisely similar to the globular induration noticed in the case of Eldridge.

Pilulæ Hydrarg. gr. v. bis quotidie. Omit. H. Mag. Sulph. &c. Dieta ordinaria.

29th (41st day).—The two swellings on the labium are softer and more vascular, and a circular yellow ulceration, with a slightly raised and rounded margin, is on their summit*. No sensible mercurial effect on the mouth.

Lotio nigra ulceribus. Pil. Hyd. gr. v. bis die.

November 12th (55th day).—The induration of the lower swelling gone, that of the upper very much less.

P. c. Pil. ter in die.

17th (60th day.)—Pil. Hyd. gr. v. Pulv. Opii, gr. $\frac{1}{3}$, ter die.

26th (69th day).—Both lobules now quite gone; there is a little turgescence of the vessels of the gums, and slight ptyalism.

27th.—Convalescent. Discharged.

Another patient, lately an inmate in this hospital, was also the subject of a sore, which I have since believed is another example of the form of sore described in the foregoing cases, but of greater magnitude: as, however, it is rather a long case, I will not transcribe it, but extract that portion only which refers to our subject. It occurred in a man (Henry Bachhoffner), æt. 22, who was admitted September 11, 1834, under Mr. Walker. Among other complaints, it was mentioned that there was a tubercular deposition above the root of the penis, on the pubes on the right side, covered with a scab; it was painful and indurated. This "tubercle" he had had two weeks. After the scab came off it displayed an ulcerated surface, and the 20th (9th day) the note I made was, that the "tubercle alluded to, above the root of the penis, is a decided syphilitic sore; it is perfectly circular, considerably elevated above the surrounding skin, and now occupied by florid healthy granulations; it has a considerable distinct and circumscribed induration, feeling more like a marble."

29th (18th day).—Sore healing fast, by a white thickened cicatrizing margin; induration subsiding.

October 2d (21st day).—Sore inclined to bleed last two days.

16th (35th day).—Sore healed some days; induration nearly absorbed.

November 1st (51st day).—Thickening of the cicatrix quite gone.

It may be proper to remark that no mercury was administered in this case*, and the common lotio nigra, with the lunar caustic gently applied at intervals, were the only local means employed.

* This is a form of ulceration which the real condyloma never assumes.

* But he had been pretty liberally *mercurialized* three several times within the period of six months previous to his admission.

CASE OF

COUGH ARISING FROM DIAPHRAGMATIC SPASM.

To the Editor of the Medical Gazette.

Sir,

Dr. Thomas Davies, in his valuable lectures upon Diseases of the Chest *, speaking of the hysterical cough of females, says, "this disease, as far as my experience extends, attacks young hysterical women. I have met with it thirteen or fourteen times, and never in the other sex." Now, sir, I do not know if the following case can with strict propriety be denominated one of *hysterical* cough, but it certainly is one of an anomalous and somewhat peculiar character—at least it is so to me; and I take the liberty of sending you the hasty outlines of it, that others may, if possible, from my imperfect sketch, form a judgment upon it. As the case only casually presented itself to my notice, and was not under my control, I regret that I did not at the time minutely record the symptoms. It occurred during my residence in a distant part of the country; however, my recollection will enable me to state the more prominent features, as I observed them.

A young man, about 20 years of age, of lax fibre and lymphatic temperament, was seized with a peculiar kind of cough, which recurred at first at rather long intervals, but at the time I saw him it could be produced by the least mental agitation, or a mere effort at volition. It consisted of a series of rapid expirations, in producing which the larynx and glottis appeared almost passive, as the expirations were effected freely, and without the characteristic *hard*, or abrupt sound, attending the alternate contraction and dilatation of the rima glottidis. The upper part of the body, during the paroxysm, was not materially affected, but the disease seemed to be produced solely by the spasmodic contraction of the diaphragmatic and abdominal muscles. During sleep, an intermission occurred. There was no dyspnœa, and no expectoration, indicating disordered functions of the aerian passages. The patient was much harassed by the excessive frequency of the convulsive action, and referred to the region of the diaphragm as the seat of his malady. The case had encountered a variety of treatment, but nothing had afforded material benefit.

It might be considered almost a solecism to talk of *hysterical* affections occurring in men, did we not know that such affections, or at any rate disorders simulating them, are not of unfrequent occurrence in that sex. In the present instance, had the disease arisen in a female, no reasonable doubt, I conceive, would have been entertained as to its nature. Hiccup alone will sometimes constitute a fit of hysteria; but I am not prepared now to assert that no other just cause can be assigned for the symptoms above detailed.—I am, sir,

Your most obedient servant,

R. H. Allnatt, M.D.

Wallingford, Dec. 1, 1834.

* See Med. Gaz. Nov. 22, lecture viii.

ON THE

STETHOSCOPIC INDICATIONS OF PREGNANCY.

To the Editor of the Medical Gazette.

Sir,

Since the publication of Dr. Kennedy's "Observations on Obstetric Auscultation," no doubt can be entertained of the value of auscultation, in ascertaining the existence of pregnancy at a period when all visible and tangible signs fail to satisfy the minds of the physician and his anxious applicant. It is a subject of rejoicing to the stethoscopist to witness the utility of his favourite instrument and companion daily increasing, and to see those who formerly affected to despise it now eagerly grasping and consulting it as an unfailing oracle.

Those of your readers who have not been in the habit of using the stethoscope in their midwifery practice, have neglected a means of acquiring much satisfactory information;—for instance, during a tedious labour, the accoucheur is naturally anxious to know the exact state of the child, which may be immediately ascertained by an application of the stethoscope from time to time, instead of trusting to the mother's account of the fœtal movements.

The pulsation of the fœtal heart varies from 120 to 150; but if the brain be compressed, the number will be much diminished. I had an opportunity of

observing this in a case of protruded funis, that occurred a short time since. When the head had entered the pelvis, during each pain the pulsation of the cord fell from 150 to 90, and immediately on the cessation of the uterine contraction, again bounded away at its usual rate. I merely mention this to guard against error; as, if the compression were long continued, it might be thought that the child were dead, and its pulse of compression be mistaken for the maternal pulse.

In cases requiring embryotomy, it would be a great relief to the operator's mind to possess certain knowledge of the state of the child. I recollect a case in point, in which, after the brain had been extracted, and the body removed, the funis was found to have sloughed and separated at the umbilicus; and I shall not soon forget the expression of delight that illumined the benevolent features of the operator when he beheld that proof of the child's having long ceased to exist. It were useless to enumerate the circumstances in which auscultation might be useful in midwifery practice.

With respect to the placental souffle, its cause has not yet been ascertained. It is synchronous with the maternal pulse, and therefore cannot depend upon the fœtus. As there is no vascular communication between the uterus and placenta, it cannot be the result of the maternal heart's action. Is it not, then, possible that it is produced by the rush of blood occasioned by the simultaneous contraction of the returning vessels of the placenta? This idea is not without support. The funis has two pulsatory movements — one of its arteries, and another of its vein, which is felt obscurely beating for a short time after all communication with the child has been cut off. The calibre of the vein is greater than that of the two arteries conjointly, so that more blood may be returned by it than was brought at once by the arteries; and thus a return of blood, as quick as it was brought to the placenta, being rendered unnecessary, is there any reason why the same powers of constitution regulating the beats of the maternal heart should not equally regulate the contraction of the returning vessels of the placenta?—I remain, sir,

Your obedient humble servant,

JOSEPH THOMAS, M.R.C.S.

Wrexham, Nov. 29, 1834.

MEDICAL GAZETTE.

Saturday, December 6, 1834.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

IMPERFECT WORKING OF THE ANATOMY ACT.

IT appears quite undeniable that the Anatomy Bill has of late worked very indifferently: in fact, the difficulty of obtaining subjects for dissection never was so great, nor the supply so limited, as it has been during the whole of the present season, and as it still continues to be*. Perhaps not above one student in ten has had the means of studying anatomy practically since the commencement of the courses in October; and the pressure of this evil will be fully understood when it is kept in mind that a considerable proportion of the pupils in the metropolitan schools only come to London for six months, or even for a shorter period, and that they have neither time nor pecuniary means for a longer residence.

This extreme dearth of subjects for dissection, although it has arisen since Mr. Warburton's bill came into operation, cannot fairly be attributed to it, or regarded as at all necessarily flowing from that source. In the winter of 1832-3, the first after the bill had passed, several of the principal schools were well supplied—the teachers, either by means of private interest, or owing to the respectability of the establishments with which they were connected, having been able to induce the directors and guardians of the poor to allow of dissection in cases where no objection had been expressed, agreeably to the provisions of the act. Indeed, the poor themselves,

* As this was passing the press, we learnt that during the last week the supply had again become rather better.—ED. GAZ.

notwithstanding the attempts of a certain portion of the daily press to excite discontent among them, evidently cared very little about the matter; and it was apparent, from the number of bodies thus obtained, that with a little time and management a supply sufficient for the whole of the London schools might reasonably—indeed, confidently—have been expected.

But they who had procured this supply kept it to themselves, alleging, that as there was not yet a sufficient number of subjects for all the schools, those ought first to be provided, the teachers at which had induced the parish authorities to assist them. The result of this was, that at the schools possessing less of this kind of local influence, comparatively few bodies were obtained; and the parties concerned very naturally murmured at the inequality of the distribution. More than one general meeting of anatomical teachers followed; and after some discussion, the expediency of a fair and equal distribution of subjects was concurred in—we believe, by all.

The Inspector of Anatomy was now also requested to give his assistance, as it was thought that some parishes, which were too distant from the schools to be under any influence emanating from them, might yet be induced to contribute towards a general supply, by the solicitation of the Inspector, or by the recommendation of the Secretary for the Home Department. It was proposed that the supplies from the outlying parishes which these official authorities were expected to influence, should be immediately directed into those schools which were most in need of them—with the further provision, that when the number of bodies thus obtained, joined to those already coming in through the channels opened for themselves by particular teachers, should be sufficient for the supply of all the metropolitan schools, the distribution should then be regulated by one person. The double office of Inspector and Distributor was undertaken by Dr. James Somerville, on the invitation of the anatomical teachers, and certainly with the view of furthering their wishes and objects. That the scheme has proved abortive is in great measure the fault of its own inherent imperfection; but at the same time it may be doubted whether full justice has been done to it; —at least the result has been that very few additional parishes have been procured, while the supply from the others has diminished, since they were required to make over their dead to the Inspector, instead of the parties to oblige whom they were originally given up. After the above arrangement had been made, the anatomical teachers, partly from a wish to avoid interfering with the Inspector, partly from the uncertainty attending the appropriation of any bodies they might procure, and perhaps, also, from other causes, have, during the last year, made no exertion to extend or even to keep up the private supply; and the result has been a most lamentable failure in the necessary means of anatomical study, so that we have complaints before us from almost every school in London.

The subject, indeed, is at present exciting a good deal of notice; and although we have been reluctant to join in the discussion, yet such an opening has now been made, as to render all feelings of delicacy superfluous. At the same time we cannot but regret to observe the vindictive spirit in which the controversy has, in some instances, been conducted. A very bitter article appeared a short time ago in the Morning Post (a very absurd paper in which to bring forward such a subject;) and this led to two very coarse letters, by Professor Quain, of the London *University*, through the

appropriate medium of the Lancet. The anonymous writer in the Post is violent and unjust; his opponent's letters are, perhaps, not quite so abusive, but they astonish no less by their acrimony, than they offend by their extreme vulgarity.

The learned Professor is vehemently opposed to the interference of teachers with parishes, but omits to mention, that he has himself derived the most essential advantage from this source;—he was content while he monopolized the whole of St. Andrew's, Holborn; but it would be too much, perhaps, to have expected equal satisfaction, since, as recently happened, he has been compelled to divide the spoil with others! He accuses those who are dissatisfied with the existing plan, of a desire "to accomplish the destruction of the smaller schools," though it be notorious that the present system is absolutely ruinous to them, and favourable to him. He asserts, that his opponents would sink the profession of the anatomist "to a state in which it would be adapted only to the taste and habits of a resurrectionist;" and either conceals, or is ignorant of the fact, that the present system has actually recalled these gentry from their abodes of infamy; and that, hearing of the wretched plight of the schools, they have recently made offers to supply them by exhumation!

Not the least remarkable among the many points in Dr. Quain's letters, calculated to excite our special wonder, is the simplicity, or hypocrisy, with which he assumes the continuance of the present plan to be advantageous to the smaller schools, and that any change would be injurious to them. Referring to those who think it would be better to return to the arrangements which, during the first season, procured so much larger a supply of subjects, Dr. Quain says, "But it is notorious that these parties confidently expect that they can accomplish the destruction of the smaller schools;" and again he tells us of "their long-wished-for object—that of undermining certain schools." There is no difficulty in discovering from this that the Doctor has a ready pen in imputing bad motives to others; but we confess we have not penetration enough to discover in what manner procuring a better supply of subjects for the smaller schools is calculated to effect their destruction: indeed the glaring discrepancy between notorious facts, and the inferences he has been pleased to draw from them, sometimes leads us to doubt whether the learned Professor be in jest or earnest. Does Dr. Quain mean seriously to imply, that the present system is one satisfactory to the teachers in the "smaller schools?"—that they flourish under it, and desire to see it perpetuated? — that they regard him as their champion, and are grateful to him for his advocacy? We scarcely think he can be so profoundly ignorant of a question on which he has written so elaborately; but if so, we have to inform him, that it is from the private teachers that the complaints have chiefly come — that on them especially has the scarcity of subjects pressed—that they, more than any other class of teachers, are anxious for a change, knowing and feeling that, to them at least, any change must be for the better. But, says Dr. Quain, the present plan allots bodies to the teachers in the ratio of their pupils, and what can be more fair? We answer, first, that this is quite at variance with the affected purpose of befriending the smaller schools; and, secondly, that although nothing can be more fair as regards the distribution of subjects for the dissecting-room, yet nothing can be more unfair if it be applied to the lecture-room. Suppose Mr. A. lectures at a *University* to seventy pupils, and

Mr. B. at a private school to ten; according to Dr. Quain's plan, Mr. A. should have six bodies before Mr. B. got one; and then, there being ten pupils of each unprovided for, both would be equally entitled to one body: A, however, should receive six more before it came to B's turn again! But it is quite clear that as many bodies are required to exhibit the structure of the human frame to the smaller number as to the larger; and therefore, to make the distribution equitable, each teacher who has a license ought to receive a certain supply of bodies, *to enable him to lecture;* while, for the dissecting-room alone, a reference ought to be had to the respective number of pupils.

It is apparent, certainly, that Dr. Quain has heretofore found good reason to be satisfied with the mode of distribution; but that he should represent this as also favourable to the "smaller schools," and himself as standing between them, and "the manœuvres which will be resorted to," we must say, is giving one portion of his brethren among the anatomical teachers credit for as large a share of simplicity, as to others he unhesitatingly assigns of dishonesty and intrigue. Nor is it against those of his own calling alone that the Doctor directs his attack; but with others he deigns to be facetious, and, in playful mood, descends from severer censure to wit and sarcasm. Apostrophizing the patron saint of the *University*, he exclaims—

"Now pray, good Mr. Editor, step with me for a little into the Borough, that we may see how the campaign went on in that quarter. The Borough King won more victories in a few short months than any other potentate whom we know, or have read of. He rode triumphant at every point, carrying all before him. With one hand he smote Grainger, with the other demolished St. Thomas. By Jove, 'Twas greatly done.'"

It is not in our duller nature to follow up this sportive strain, and therefore, leaving the writer and his companion to "ride triumphant," we return once more to plain facts and common sense. We say, then, that the experience which has been gained by the past, amounts nearly to this:—

1. The poor in workhouses are not disposed to raise any outcry against Mr. Warburton's bill, when its provisions are quietly and decently fulfilled.

2. The directors of the poor, in the parishes adjacent to the schools of most repute, have shewn a willingness to farther the objects of the bill.

3. But the parties last-mentioned have made a great (nor do we think either an unnatural or improper) distinction between giving up bodies to schools in their vicinity — to persons whom they know, and of whose proceedings they could have easy observation—and allowing them to be distributed at the choice of a general superintendent, among all the numerous and distant schools of London.

4. The number of bodies supplied by a given parish, depends in a great degree upon the good will of the servants in the workhouse; and so long as the act is *permissive*, not compulsory, it must be so: not, it is pretty evident, that the teachers of a single school in the neighbourhood of any workhouse would more easily and effectually conciliate the important personages alluded to than could be done by a single officer, whose influence and attention are to be divided among all the parishes of the metropolis.

5. The directors of the poor are like any other board. It is not enough that a proposal which is new should be good; it must come recommended by personal interest, and be attended by the

wish to confer personal obligation. The teacher in the neighbouring school makes his application in this manner:—his friend at the board speaks to his colleagues, and a favourable hearing is thus procured for the proposal, what is granted being felt and acknowledged as a voluntary act of patronage and grace. But when the inspector makes his official application, the dignitaries of the parish are arrayed against the interference of the government, and straightway the board discovers it to be cruel and barbarous that the poor should be dissected at the nod of a Minister. Nor is this any imaginary case. At St. Giles's, the directors of the poor intimated that they would give up for dissection the bodies of those dying in their Infirmary, to *certain* schools in their neighbourhood, the teachers of which they thought they could trust for fulfilling the provisions of the act; but added, that if compelled to a general distribution, they would give none. Again: the other day a certain parish intimated that there was a body which might be had for dissection, if sent to St. Bartholomew's. The inspector, in the routine of business, ordered it to be sent to the London University; and the result was that the parish authorities preferred to bury it.

If the preceding observations be correct, the conclusion is inevitable—namely, that the sooner the teachers are allowed to do what they can to aid themselves, the better. A large additional mass of interest will thus be brought to bear upon the parishes, and the supply will no doubt increase—becoming at least as great as it was in 1832-3. It is quite true that this will probably be attended, in the first instance, with some inequality of supply; still there will be bodies somewhere, and the means of studying anatomy will re-exist in London. But though those who happen to have most parish interest will be best off at first, yet will others be better provided than at present, (worse they cannot be); because they would be relieved from their most absorbing competitors, and the inspector might be able to supply them from the prisons, hulks, and other establishments under government control, as well as by gaining over the outlying parishes to which his exertions would then be limited.

We cannot conclude without adding that Dr. James Somerville has a most difficult and invidious task imposed upon him: he ought not to be required to act both as inspector and distributor; we have heard it likened to combining the offices of receiver and auditor in other things. The impression pervading almost all the accounts sent to us, is, that he has favoured the London University; but no proof of any kind is offered of this, and probably it has originated entirely in his having employed a pupil of that school as his clerk, and in the circumstance of Dr. Quain being almost the only person contented with the present arrangements. It is our sincere belief that the inspector has done all that he possibly could to procure an adequate supply of subjects, and to satisfy the demands of all; but that, under the present circumstances, neither he nor any other individual can accomplish this.

We are glad to find that the College of Surgeons have taken up the matter—having addressed a circular letter to the teachers; and we have little doubt but that we shall soon have to announce some arrangements more satisfactory than the present, the inadequacy of which seem now to be so strongly and generally felt.

The letter alluded to will be found on the other side.

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COLLEGE OF SURGEONS.

CIRCULAR ADDRESSED TO TEACHERS OF ANATOMY.

It having been represented to the Court of Examiners of the Royal College of Surgeons in London, that the anatomical schools in the metropolis have been very inadequately supplied with subjects for dissection since the commencement of the anatomical session in October last, I shall feel obliged (for the information of the Court), if you will have the goodness to inform me whether this report is true; and if you have reason to complain of great difficulty in teaching anatomy under existing circumstances; and if it is possible for the students to be properly instructed under the impediments which at present are reported to exist in obtaining a proper supply of bodies.

I have the honour to be,
Your obedient servant,
ANTHONY WHITE, *President.*

Nov. 18, 1834.

MEMORY OF PROPER NAMES.

FUNCTION OF THE CORPORA STRIATA.

At a meeting of the Académie de Médecine on the 25th ult., M. Rouchoux made some remarks relative to M. Roux's recent allusion to Scarpa's brain. He said that the craniologists were answerable for quite enough of errors, without having others imputed to them with which they had nothing to do. M. Roux had said, that the corpora striata in the brain of Scarpa were found deeply diseased, and that this fact was connected with his forgetfulness of proper names. But anatomical examinations had generally shewn, that the corpora striata were sound in persons who had lost their memory, whilst they were often in a highly morbid state in subjects who had suffered no such loss. M. Castel observed, that partial forgetfulness of proper names had no connexion whatever with lesion of this or that part of the brain. When the memory was at all at fault, it was most commonly with respect to proper names, which are more difficult to remember than other words. Thus Broussonnet could never recollect the name of Desfontaines, whom he much prized; nor that of Bose. M. de Maran, formerly secretary of the Académie des Sciences, had the same peculiarity. M. Roux, in reply, protested against being supposed to place in necessary connexion loss of memory and lesion of the corpora striata; he had merely brought the two facts together, and did not consider it as by any means proved that the one depended on the other.—*Gaz. des Hôp.*

M. DUPUYTREN'S MUNIFICENT DONATION.

It is the wish of M. Dupuytren to found a chair of Pathological Anatomy in the School of Medicine, Paris; and for this purpose he has allocated no less a sum than 200,000 fr. (8000*l.*) It is to be hoped that this eminent professor will state explicitly how he would have his chair of pathology filled; for already we observe that some agitation on the subject is begun: the *pupils* have got up a petition to M. Dupuytren, praying him to fix the nomination by *concours.*

CLINICAL LECTURE

ON

DISEASES OF THE MAXILLARY ANTRUM.

Delivered at St. George's Hospital, Nov. 11, 1834,

BY SIR B. C. BRODIE, BART.

Gentlemen,—I shall draw your attention to-day to a case in one of the upper wards, that of Samuel Tovey, admitted on the 1st of this month.

Eight years ago he fell down as he was walking on the slippery pavement, by which his nose, and the whole left side of his face, were bruised. Ever since he has had pain of these parts. The left side of the face became swollen; the pain increased, and matter was discharged through the nostril. Matter also occasionally made its way through one of the alveoli of the superior maxillary bone; and he continued in this state at the time of his admission into the hospital.

On the 7th November I made an incision which separated the upper lip, or rather the cheek, from the jaw; and a probe having been introduced, it appeared to me that the extremity of it came in contact with a portion of dead bone, in the situation of the antrum maxillare. I then introduced a pair of strong sharp-pointed scissors, using them in their closed state as a chisel, to break down the thin plate of bone above the grinding teeth, so as to expose the cavity of the antrum, in which I could then feel small fragments of dead bone, some of which were extracted. On the following day some other small portions of dead bone passed through the nose. There were now swelling and pain on the left side of the face, with a good deal of headache, and a frequent pulse. The patient was ordered to be purged. On the 9th, two days after the operation, he had shivering, and was delirious in the

night. On the 10th, however, he was much improved, able to get up; and to-day the report is, that the pulse is slower, easily compressed; the tongue clean; the bowels open.

Here was a patient who had met with a severe blow on the head and face eight years ago, who had been suffering ever since; and now I have made an opening into the antrum, and extracted fragments of dead bone which were lying in its cavity. No doubt there are other fragments there; and I expect that they will come away through the opening that has been made. There can be no question that, at the time of the injury, some mischief was inflicted on the bones, which caused portions of them to die, some of these afterwards coming away by themselves, while others could not be removed without this operation.

The occurrence of this case affords me the opportunity of speaking to you concerning diseases of the maxillary antrum generally. I am glad to draw your attention to this subject, because it is one of great interest, and also one of which I do not think there is in general any very clear account given by surgical writers. I may add another reason, namely, that cases of disease of the antrum are not sufficiently common occurrences for many of you to become masters of the subject by what you see during one or two years' attendance on hospital practice.

Inflammation of the Maxillary Antrum, independent of local causes.

I have seen cases, and to these I shall first call your attention, in which there appeared to be inflammation of the maxillary antrum, independent of a local cause, arising out of something in the state of the constitution, and approaching in its character a good deal to that of severe rheumatic inflammation. I do not know that I can make you acquainted with the history of the disease of which I am now speaking, better than by describing to you the circumstances belonging to a particular case, of which I happen to have preserved notes. I was consulted with Mr. Clough, of Norton-Street, respecting a young man who complained of excessive and constant pain, referred to the situation of the maxillary antrum of the left side. There was some degree, but not much, of tumefaction of that side of the face; tenderness in the situation of the antrum every where; the very severe and constant pain which the patient endured being aggravated by pressure. In addition to these local symptoms, there was a good deal of febrile excitement of the general system. The disease had existed for two or three weeks, gradually increasing up to the time of my being consulted. Believing this, then, to be a case of inflammation of the maxillary antrum, and thinking it not improbable, from the time that the inflammation had lasted, that suppuration might have already taken place in the cavity, I made a perforation into it above the second molaris. (I shall speak of the manner of making the perforation presently.) No fluid, however, of any kind escaped through the aperture. I then recommended what I had found successful in some other cases, that the patient should take pills composed of two grains of calomel and half a grain of extract of opium, three times daily. In about three days the gums were a little sore, the pain began to abate, and at the end of three or four days more the symptoms had entirely subsided. I believe that, when you are called to a case of this kind, you will seldom find the plan of treatment which I have here described to fail.

But inflammation of the membrane lining the antrum may end in suppuration, so that there may be a collection of pus in the cavity of the antrum, and I conclude that such acute inflammation as existed in the case just described might terminate in this manner, if not artificially arrested.

Inflammation of the Antrum dependent on local causes.

However, where matter forms in the cavity of the antrum, I certainly believe that in most instances there is some local mischief first, and that suppuration of the membrane lining the antrum supervenes as the consequence. The cause in which the disease originates is generally a diseased tooth. The patient has a bad tooth in the upper jaw, one of the molares, or perhaps one of the bicuspides (or it may even originate in the cuspidatns when the fang comes near the antrum.) The tooth is carious, and by and by the patient has the toothache. He does not like either to lose the tooth, or to submit to the pain of having it drawn, and so he submits to the toothache. The inflammation on which the toothache depends then terminates, as it always does, in the death of the pulp of the tooth. Then the whole tooth dies, and it is now like a portion of dead bone, or any other foreign substance, stuck in the jaw. Such a dead tooth may remain in the jaw for many successive years, exciting no irritation, and leading to no mischief. In other cases, however, the tooth begins, even at an early period, to operate as a cause of irritation, and it almost invariably does so ultimately. Then inflammation takes place at the bottom of the alveolus, and is followed by suppuration. The matter cannot readily escape; perhaps it makes its way downwards between the tooth

and the alveolus, and presents itself in the gum, forming a kind of gum-boil. At other times the tooth is so firmly wedged in the alveolus, that the abscess cannot find its way in this direction. Under these circumstances it collects at the bottom of the alveolus, and occasions the patient extraordinary pain and suffering. The matter lying upon the bone destroys the periosteum lining the alveolus; the bone itself becomes absorbed; and the inflammation extends to the mucous membrane lining the antrum. Sometimes a small fragment of bone in the neighbourhood loses its vitality, and there is then a piece of dead bone separating the alveolus from the antrum, and producing suppuration in this cavity. Thus there is an abscess in the antrum, with a splinter of dead bone above, and a dead tooth also at its inferior part. While this process is going on, the patient suffers at first an extraordinary degree of pain from the matter pent up at the bottom of the alveolus; afterwards, when the antrum becomes affected, he complains of a dull constant pain in the cheek, with the addition of certain lancinating pains coming on as an aggravation of the pain which is constantly endured. There is then an effusion into the soft substance under the skin, rendering the face on that side œdematous, with a slight degree of red discolouration on the surface; and the patient may remain in this condition for a great length of time. In some cases matter is discharged by the nostril, but not always, for the inflammation of the antrum may have the effect of stopping up the orifice where it communicates with the nostril, between the two turbinated bones. When the opening of the antrum remains pervious, the patient will, of course, experience occasional relief from the matter passing into the nostril. I have said that sometimes there is, and sometimes there is not, a fragment of dead bone; but this, as far as I know, makes no difference in the symptoms, although, when there is dead bone, the recovery of the patient may be expected to be more difficult and tedious.

Treatment.—In these cases you may relieve the symptoms for a time by applying leeches to the cheek, by the exhibition of purgatives, and by adopting what is called an *antiphlogistic* treatment of other kinds. But it is evident that such antiphlogistic treatment can only *relieve* the symptoms—it cannot strike at the root of the disease.

The first thing to be done is to extract the dead tooth; and it may be that this is all that is wanted. If, when the tooth is drawn, there is a free communication between the alveolus and the cavity of the antrum, the matter is discharged through the opening, and the patient is immediately relieved. In other cases, however, when the tooth is drawn, either the abscess of the antrum does not discharge itself at all through the aperture, or it does so only in an imperfect manner. The plate of bone between the alveolus and the antrum is generally very thin, and you may easily introduce a sharp-pointed instrument into the bottom of the alveolus after the tooth is extracted, and break it down, so as to establish the communication which is wanted. This must always be done whenever the extraction of the tooth does not leave any or a sufficient opening for the discharge of the matter from the cavity above.

The instrument with which you make the opening should be formed like a common hydrocele trocar, but a little larger (of course without a canula), and it should not be made of the best steel; for I once used a common trocar, made of steel, in an operation of this kind, and it broke while I was performing it. In this case, I extracted the broken portion very easily, but you can conceive that such an accident might occur, and you might experience great difficulty in extracting the point of the instrument. The steel, then, ought not to be very finely tempered, but such as would bend a little instead of breaking. There is no occasion for its being otherwise; for you do not want a very sharp-cutting instrument. It is sufficient if it be strong, and will not easily break.

When the bottom of the alveolus is broken down, the matter will readily escape from the antrum, and you may introduce a probe and explore its cavity, so as to ascertain whether there be in it any dead bone or not. Sometimes there is a piece of dead bone at the bottom of the alveolus, and then you have only to wait patiently till an opportunity occurs for its removal. At other times you will feel the dead bone after the probe has entered the antrum, and the opening already made may not be sufficient for its extraction. Under these last-mentioned circumstances, the opening must either be enlarged or another made in a different place. When a free opening has been formed into the antrum, you should allow the patient at first to remain quiet, with a piece of bougie or gum catheter retained in it, in order to prevent its closing. This should be taken out two or three times daily, to allow the escape of the matter. After two or three days, being provided with a syringe having a slightly curved pipe, small enough to enter the opening, you should begin to wash out the cavity of the antrum by injecting some tepid water into it once or twice daily. The water injected will generally pass into the nostril,

shewing that the natural aperture of the antrum remains pervious; and if it be, then you are able to wash it out more readily and completely than you could do otherwise. If you find that the injected water does not pass out of the nose, you will know that the natural opening between the two turbinated bones is blocked up, and you will then have a little more trouble in washing the cavity of the antrum thoroughly out.

Let us suppose another case—viz. that a dead tooth has been allowed to remain until it has produced suppuration of the antrum; that it has then been extracted; that nothing further has been done; and that the patient has been left either with no opening at the bottom of the alveolus or one that is insufficient. Under these circumstances, the bottom of the alveolus becomes filled up with new bone, the edges at the inferior part are absorbed, and the alveolar cavity no longer exists. It is absolutely necessary to the patient's recovery that an opening should be made into the antrum; but where, in such a case as this, would you make it? In the situation of the alveolus? This is an awkward place for the purpose, on account of the thickness of the bone which you have to penetrate. It may be a good situation when the tooth has just been drawn, but it is a very bad one when the jaw has become consolidated afterwards. The best mode of making the opening is this: raise up the cheek so as to expose the membrane covering the gum on the side of the face, and with a scalpel make a transverse incision down to the bone. Always make this incision through the membrane before you begin to perforate the bone. In one case I did otherwise, thinking the division of the membrane, as a separate part of the operation, was unnecessary; but the consequence was, that the blood escaped into the cellular membrane beneath, and there was an immense ecchymosis, making the rest of the operation very difficult. Always, then, divide the membrane first, where it covers the jaw just above the alveolar processes of the grinding teeth, and then perforate the thin plate of bone as nearly as possible to what you suppose to have been the original seat of the disease.

What instrument is to be employed in making the perforation—a trephine? That is quite unnecessary. Nothing is better than a pair of sharp-pointed strong scissors; apply them to the bone in their closed state, using them as a chisel, and they will easily penetrate it, and go into the antrum. You have then only to press on the scissors, giving them at the same time a rotatory motion, and you will easily break away a circular portion of bone. If the opening be not sufficient, a broader pair of scissors may afterwards be used to enlarge it; which you may do easily, so as to make it of almost any dimensions. That is the way in which I performed the operation the other day, and you know that the finger easily penetrated through the opening thus made into the cavity of the antrum. The opening being completed, you may introduce a probe or your little finger, to ascertain if there be any dead bone. As the soft parts contract, it will become necessary for the patient to wear a plug in the orifice, to prevent it being closed. A piece of ivory or box wood answers the purpose very well. The plug should be conical in shape, so that it may not slip into the cavity of the antrum. It should be withdrawn twice daily, and a little tepid water injected into the antrum to wash it out. This practice may be continued as long as the discharge of pus continues, or as long as you have reason to suspect that there is any dead bone to come away.

In some cases the patient recovers perfectly after the operation, and in others not. A lady consulted me, who had had symptoms of abscess in the antrum for many years, being otherwise in very ill health, and there was the greatest reason to attribute her ill health in part to the putrid matter collected in the antrum passing through the nostril into the fauces, and being swallowed during sleep. There was a carious tooth, which was extracted, and I then made a wide opening from the bottom of the alveolus into the antrum, and let out a good deal of pus. A plug was kept in the opening, and the antrum washed out night and morning; the fluid used in the injection flowing into the nostril. No dead bone ever came away, nor was any ever felt by the probe; but, nevertheless, the suppurative discharge continued. The patient, some few years afterwards, died of disease of the lungs, and I believe that to the day of her death the discharge of pus from the antrum had not ceased. Where there is extensive dead bone which does not come away easily, of course you will understand that suppuration must continue; but here it continued although there was no dead bone—at least none was ever discovered.

Collection of Transparent Fluid in the Antrum.

The next disease of the antrum of which I shall speak, is one of more rare occurrence; in fact, I have seen only two cases, and I can only find one or two instances of the kind on record. A lady consulted me with a large projection of one cheek. It looked as though she had a

large plum in her mouth. I lifted up the cheek, and found a projection in the situation of the antrum of one side, elevating the membrane from the gum, and the flesh of the cheek also. This projection was as large as a pigeon's egg. The surface, where it was covered by the membrane of the cheek, gave way a little under the pressure of the finger. There was no distinct fluctuation, but a kind of crackling sensation communicated to the fingers, as if you pressed upon very thin horn, or dry parchment. This being the first case of the kind that I had met with, I did not know what it would turn out to be, and I thought it likely that there was some solid tumor in the antrum. I took a curved scalpel, not bent in the direction of the cutting-edge like a bistoury, but bent laterally, with a strong sharp point (which I had found very useful on some other occasions, (and introduced the point into what seemed the thin bony parietes or boundary of the tumor; having previously dissected the membrane of the cheek from the jaw. Immediately there escaped a large quantity of transparent fluid, like very thin mucus; something like what we find in cases of ranula. I then introduced a probe into the cavity of the antrum, and found that it might be passed in any direction. There was neither tumor nor dead bone, and the cavity seemed to be in a natural state, except that it was enormously dilated. I next enlarged the opening, cutting out a circular portion of thin bony shell formed by the expanded parietes of the antrum. After the operation the tumor subsided, and in the course of a few weeks the cheek was not larger than the other. The aperture made by the scalpel has continued pervious to this day, though it is ten years since I performed the operation. The lady wears a plug, which she takes out night and morning, and with her own hand introduces the point of a syringe, and washes out the antrum. I suppose that there can be no doubt that, in this case, from some accidental cause, the natural aperture into the nostril had become closed, and that the mucous secretion of the antrum, having no means of escape, collected and distended the cavity to this large size. The same thing happens to the gall-bladder when the ductus cysticus is obstructed: the gall-bladder then becomes enormously distended—not with bile, but with transparent mucus.

This last summer I was consulted, with Mr. Lawrence, concerning a case exactly similar to the one which I have just described, but it occurred in a boy. Mr. Lawrence made an opening into the tumor, and let out a large quantity of transparent fluid. I have not heard of the patient since, but I have no doubt he completely recovered.

Polypus of the Antrum.

Surgical writers describe polypi as arising from the mucous membrane of the antrum;—nay, some have gone so far as to tell you how you are to apply a ligature round the base of this polypus, so that it may wither and drop off. The history and treatment of such a polypus is, however, altogether hypothetical. No polypus, I believe, ever existed in the antrum, around which a surgeon could put a ligature; and I never heard of the operation being performed, though it has been described by some writers.

Malignant Tumors of the Antrum.

Tumors of a malignant kind, however, grow in the antrum, partaking partly of the nature of fungus hæmatodes, and partly of carcinoma. They are attached to the mucous membrane, and soon grow so as to fill up the cavity. I suppose that at first they produce but little pain, and that the patient has scarcely any symptoms of disease; at any rate there are no symptoms, by the description of which the surgeon would be able to recognize the existence of disease in its very early stage. But it is otherwise as the disease advances. The tumor, growing larger, presses upon the inner surface of the antrum, and causes its bony parietes to become dilated. By and by it makes a projection in the cheek, just like that which I described in the last case, where there was a collection of mucus in the antrum. After a time, there is another projection in the situation of the bony palate—that is, the tumor presses upon the floor of the antrum, as well as at the sides. Then another projection occurs at the inferior part of the orbit; and there is another still blocking up the nostril: in fact, the antrum becomes distended every where, causing an enlargement of the cheek, bringing the bony palate to a level with the grinding teeth below, and diminishing the cavities of the orbit and nostril. The bony substance of the antrum becomes absorbed under the pressure of the tumor; the base of the alveoli is destroyed; the teeth are rendered loose, so that they merely hang in the jaw by flesh, and you can extract them with a pair of forceps, or they drop out of themselves. The tumor goes on increasing until the antrum will admit of no further distention; ulceration takes place, and the malignant growth projects through the ulcerated opening. Generally it projects, in the first instance, under the cheek. A large ulcer is formed there, and the tumor appears through it. It then makes its

way by ulceration into the mouth and orbit; sometimes it pushes the eye upwards, and at other times forwards, so that it is quite out of its natural place; and in either case it occasions blindness. As the disease makes still farther progress, it forms a large tumor in the mouth, compressing the tongue, and preventing mastication.

The malignant growth having made its way externally, and being freed from the pressure of the neighbouring parts, increases at a still more rapid rate than before. There is profuse discharge, occasional hæmorrhage; and the patient is worn out partly by these causes, partly by misery and anxiety of mind, and by starvation: for now he is unable to masticate solid food; and as the destructive process of the parts in the neighbourhood goes on, there is at last great difficulty in swallowing even liquid nourishment, only a small portion of which goes down the throat, while the greater part passes out at the aperture in the cheek. I do not know any thing more miserable than the deathbed of a patient who dies from this horrible disease. Such is a brief history of its progress; but if you wish for further information on the subject, you will find an excellent and very graphic account of it in Mr. Travers's paper on Malignant Diseases, published in one of the volumes of the Medico-Chirurgical Transactions.

I suppose that it is this disease of which some surgeons have conceived that it might be removed by ligature. Others have imagined that it might be got rid of by other means: that we might make an opening into the antrum before the tumor acquired a very large size, turn it out with the fingers, and apply the actual cautery to the surface from which it grew. I believe there is a case recorded by Desault, where this operation was performed, and it is spoken of as being successful. But if I remember right, he gives the history of the case no later than three months after the performance of the operation; and you all know that a malignant disease may appear to be cured for a twelvemonth, and yet return. The circumstance of the patient appearing to be tolerably well three months after an operation of this kind, by no means proves that it produced a permanent cure.

I did attempt to destroy a tumor of this kind formerly, in the following manner. It was in the early stage of the malignant growth; but the cheek bulged out over the dilated antrum, and the bone of the antrum was absorbed. With a common scalpel I cut out a large portion of the membrane, which now formed the only boundary of the antrum. I then found a large tumor, suspended, as it were, in the antrum, appearing to grow from a broad surface. The outer part of the tumor was of soft consistence, which I broke down with my fingers, and I then turned the tumor out, so that the antrum appeared to be perfectly empty. But this was not done without an enormous and indeed frightful hæmorrhage. I introduced a quantity of what we call *blue lint*—that is, lint dipped in a solution of copper, and then dried, and filled the cavity of the antrum with it, hoping that this might make the base of the tumor to slough off. Sloughs did come away, but, nevertheless, there was no destruction of the disease. I applied caustic afterwards, and the actual cautery, very extensively, but without at all checking the growth of the tumor, which went on in spite of all the plans I adopted with a view to restrain it: in short, it grew faster than I could destroy it, the cheek ulcerated, and the patient died in the miserable way that I have just described.

GUY'S HOSPITAL.

CLINICAL LECTURES.

To the Editor of the Medical Gazette.

SIR,

THE abuse and misrepresentations of the Lancet have caused a kind of suspicion to be thrown by the public on the motives of those students who come forward as complainants; nevertheless, I feel it necessary to appeal to you for insertion of a plain statement respecting one of the surgeons of Guy's Hospital.

On the 7th October Mr. Morgan gave the surgical pupils an "*introductory*" clinical lecture, and a good one too. He spoke of the advantages of hospital attendance,—on the necessity of clinical lectures: he told us, that without these our education must be considered *imperfect*, even although we had attended the systematic lectures. He expressed his determination to meet us weekly, and added, that Mr. Cooper would do the same; and after making some useful observations on strumous ophthalmia, concluded by saying, "On this day week I shall meet you with some other subject." From that time to this Mr. Morgan has *not given a single clinical lecture.*

Now, sir, having gone round several times with Mr. Morgan, knowing his name as a writer, and being much pleased with that urbanity and willingness to communicate information which have rendered him so popular with the pupils, I confess that when I paid my 26*l.* 5*s.* I felt that Mr.

M.'s clinical lectures were no small part of the privileges I was to gain.

I have little doubt that Mr. Morgan's retiring disposition has been the obstacle to his lecturing; but I am also sure that he will see the propriety of not allowing that to interfere with what his promise at the commencement of the season has rendered an imperative duty.

I hope I may stand acquitted of intentional disrespect to Mr. M. in bringing this before his notice.

Your obedient servant,

C. C. S.

Dec. 2, 1834.

P.S. It is but justice to Mr. Cooper to say, that he has lectured regularly every Saturday.

COLLEGE OF SURGEONS.

LIST OF GENTLEMEN ADMITTED MEMBERS IN NOVEMBER 1834.

Alex. Ure, Charlotte Street, Bedford Square.
John Jones, Newcastle Emblyn.
Charles Bennett, Commercial Road.
John Bryden, Manchester.
William Jones, Bristol.
William Fisher Moore, Preston.
Henry Dunning, Baileyburrow, Co. Cavan.
Francis Burnett, Aberdeen.
William Apjohn, Limerick.
Thos. William Trotman, Barbadoes.
Fred. H. Clark, London.
James Pattison, ——
Abraham King, Bridgewater.
Henry P. Jones, Pembroke.
William Brebner, Jamaica.
Arthur William English, Hull.
Gay Shute, Mecklenburgh Square.
John Hand, London.
John L. Craigie, ——
Henry Harvey, Newcastle-upon-Tyne.
John Hughes, Llanrwst.
Henry H. Harrison, ——
Henry Wooldridge, Winchester.
George T. Fogarty, Drogheda.

APOTHECARIES' HALL.

LIST OF GENTLEMEN TO WHOM CERTIFICATES HAVE BEEN GRANTED.

Thursday, Nov. 27, 1834.

Samuel Gamble Willcox.
Alfred Hall, Grange-house, Derbyshire.
Nicholas McCann, London.
Robert William Smith, Bristol.
Henry Davenport, Egham, Surrey.
James Henry Wells, Cheltenham.
Robert Whitmore Clarke, Margate.
Robert Dent, Aylsham, Norfolk.
Henry Prout Jones, Pembroke.
Frederick Richard Hitch, Melbourne.
William Barnard, Bramdean, Hants.
Thomas Harwood, Boston.
Reginald Orton, Bombay.
Percival Leigh, South Cross, Minchester.

Saturday, Nov. 29.

Francis Packard, Middleton, Suffolk.
Richard Burdsall Lyth, York.
Robert Craven, Wakefield.
Thomas Lavery, Manchester.

Thursday, Dec. 4.

Walter Watson, Grandbro', Warwickshire.
James John Garth Wilkinson, Warwickshire.
Edward Pope, Chippenham, Wilts.
John Smith, Wigton, Cumberland.
James Titterington Jameson, Ashton-in-the-Willows.
James Watson, Sheffield.
John Charles Atkinson, Sheffield.
John Orton, Earl Shilton, Leicester.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *Dec.* 2, 1834.

Age and Debility	52	Inflammation	23
Apoplexy	8	Bowels & Stomach	5
Asthma	20	Brain	3
Childbirth	5	Lungs and Pleura	6
Cholera	1	Insanity	6
Consumption	70	Jaundice	1
Convulsions	40	Liver, diseased	5
Dentition or Teething	5	Measles	25
Dropsy	22	Mortification	7
Dropsy on the Brain	8	Paralysis	1
Dropsy on the Chest	2	Scrofula	1
Dysentery	1	Small-Pox	12
Fever	7	Sore Throat and Quinsey	1
Fever, Scarlet	13	Spasms	2
Fever, Typhus	3	Thrush	3
Gout	1	Unknown Causes	7
Hæmorrhage	1		
Heart, diseased	6	Stillborn	16
Hooping-Cough	20		

Decrease of Burials, as compared with the preceding week . . . 17

METEOROLOGICAL JOURNAL.

Nov. 1834.	THERMOMETER.		BAROMETER.	
Thursday . 20	from 28	to 43	29 94	to 29 80
Friday . . 21	30	47	29·70	29·78
Saturday . 22	36	47	29·86	29·92
Sunday . . 23	30	47	29 98	30 01
Monday . . 24	32	46	29 99	29·98
Tuesday . . 25	35	44	29·88	29·84
Wednesday 26	34	40	29·78	29·75

Prevailing wind, N.E.

Except the 20th, and evenings of the 23d and 26th, generally cloudy. A few flakes of snow on the morning of the 21st; rain at times on the evening of the 22d.

Thursday . 27	from 26	to 46	29·68	to 29·58
Friday. . . 28	38	48	29·50	29·46
Saturday . 29	36	49	29·45	29·40
Sunday . . 30	34	47	29·35	29·37
December.				
Monday . . 1	38	50	29·24	29·16
Tuesday . 2	40	52	29·45	29·68
Wednesday 3	39	51	29 96	30·09

Prevailing wind, S.W.

The morning of the 27th generally clear; rain in the evening; the 28th cloudy, except the evening; the 29th and 30th generally clear; rain at times on the 1st instant; the 2d and 3d cloudy.

Rain fallen, ·55 of an inch.

NOTICE.

"Vindex" seems to be but imperfectly acquainted with the facts about which he writes. Our impartiality, moreover, would be compromised, were we to insert his anonymous letter.

W. WILSON, Printer, 57, Skinner-Street, London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, DECEMBER 13, 1834.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture XI.

DISEASES OF THE PARENCHYMATOUS STRUCTURE OF THE LUNGS.

PERIPNEUMONIA.

Signs of Engorgement.

We now proceed to consider the signs of peripneumonia, detailing them in relation to the order in which we have described the anatomical stages of the disease.

Local Signs.—1*st. Engorgement—Crepitation.*—The lung in the first stage of inflammation is gorged with sanguineous serum. You recollect the proposition I advanced in treating of auscultation—that whenever fluid, combined with air, existed in the tissue of a lung, it produced a crepitating sound. This sound is pathognomonic of engorgements. It is analogous to the bursting of a number of small, equal-sized, and slightly humid bullæ in rapid succession: it is exceedingly distinct, if the engorgement be near the surface of the lung, but becomes much less so, if it be an inch or two from it; if farther still, the crepitus is no longer heard: so that it sometimes occurs, when the inflammation commences in the centre of the organ, that no local signs whatever are appreciable, although the functional and general symptoms of peripneumonia be present. It, however, almost invariably happens that the engorgement arrives ultimately at the pulmonary surface, often in a few hours, or, at most, in a day or two, and then the crepitation, which was masked by the sound of the respiratory murmur, becomes perfectly distinct, and the disease is no longer latent or obscure.

The crepitation is heard first in the lower lobes of the lungs, because the engorgement begins there. As hepatization commences, the bullæ seem more humid, are less equal in size, and succeed each other with less rapidity. The respiratory murmur gradually diminishes, till it finally ceases with the crepitation, as the organ solidifies.

Percussion.—If the engorgement occupy but a small portion of a lobe, then there is no difference in the sounds on percussion; indeed, if even the engorgement be considerable, it requires an experienced hand and ear to detect a difference, because the inflamed lung still contains a considerable quantity of air. As the liver often mounts high in the chest on the right side, no inference ought to be drawn from eliciting a dull sound from the inferior ribs of that side, as it may depend upon the presence of that viscus, as I have before explained.

2*d Stage—Hepatization.*—Neither the natural respiratory murmur nor crepitation can now be heard, because no air exists in the vesicles to produce the first sound, nor is there a mixture of air and serous fluid in them to produce the second. Occasionally *bronchophony* takes place, particularly when inflammation attacks those parts of the lungs where the bronchial tubes are the largest, as at their roots or upper lobes: this phenomenon is very evident when the disease appears at the surface of the organ, and is indistinct when in the centre.

When, combined with hepatization, a thin layer of fluid is interposed between the pleuræ, the bronchophony becomes louder, in consequence of its combination with œgophony. These sounds are always most distinct at those points of the chest which correspond to the roots of the lungs, because there the bronchial tubes are largest;

but as these tubes become of less diameter in the inferior lobes, there the bronchophony is less audible.

The bronchial respiration and cough always accompany bronchophony; sometimes these sounds are heard when the latter is not. It appears that the two first signs may be distinguished when the hepatization is deep-seated, but the union of the whole only when it is superficial.

The solid lung renders the wheezing incident to accidental co-existing catarrhs much more distinct.

When the hepatization surrounds a large bronchial tube near the surface of the organ, particularly at its roots or superior lobes, then the bronchophony simulates pectoriloquy, and is often also accompanied by the sensation of blowing into the ear, described in the lecture upon auscultation. If a slight portion of non-hepatized lung be placed between the parietes of the chest and the resounding tube, then the "souffle voilé" is heard.

As the inflammation extends, the crepitation extends also. Thus the signs of engorgement will occur in the first instance in the lower lobe, to give way to those of hepatization; then they will be heard surmounting the parts hepatized, to give way also to those of consolidation; and so on successively, until the whole of the lung becomes solidified.

In consequence of the power of respiration being lost in the inflamed lung, the necessity for respiration increases in the other, so that in the latter the respiratory murmur becomes extremely loud, constituting the *puerile* respiration. This condition of the respiratory murmur in the healthy lung is always distinct in proportion to the extent and completeness of the hepatization.

The sound is dull upon percussion, except the disease attacks the centre of the lung, and then sufficient air will be interposed between the solid parts of the organ and the parietes of the chest to produce a good sound. Percussion on the lower part of the right side of the chest cannot be depended upon, from the presence of the liver, as I have before indicated. If, however, you have been enabled to follow the disease from the state of engorgement, then you can unhesitatingly say, if the sound be subsequently dull, that it depends upon hepatization, and not upon the presence of the liver.

3d Stage—Purulent Infiltration.—There are no local signs of this state differing from those of hepatization. The same physical state exists here, as far as relates to the solidification of the lung, and consequently the same physical signs present themselves.

4th Stage—Vomica.—But when the concrete pus softens, and is evacuated, at the point of the chest corresponding to the vomica a noisy mucous rattle occurs, which is gradually transformed upon inspiration and coughing into a cavernous sound. Pectoriloquy also appears. The sensation of blowing to and from the ear occurs, if the abscess be near the parietes of the chest, and the "souffle voilé" becomes distinct, if the walls of the cavity be thin and soft, and not adherent to the costal pleura.

5th Stage—Gangrene.—I have met with fourteen or fifteen instances of gangrene of the lung, and in every case crepitation was discoverable; doubtless, because of the accompanying engorgement of the lung. When the organ commences to break down and form an excavation, then the mucous rattle is very audible; it gives way at last to complete pectoriloquy, with cavernous rhonchus and cough. If the excavation opens at once into the bronchi and pleura, then the metallic tinkling, or the amphoric resonance, are produced.

Local Signs of the Resolution of Peripneumonia.

1st Stage—Engorgement.—You will recollect, gentlemen, that when resolution of the engorged lung occurs, that the red-coloured serum gives place to a colourless fluid infiltrating the air-cells; consequently, although the inflammation has diminished, or even disappeared, yet the crepitation will remain for some time; it finally, however, becomes less distinct, until at last it totally disappears, leaving the sound of the natural respiratory murmur.

2d Stage—Hepatization.—When resolution takes place from hepatization, you will remember also that the solidified lung returns into a state of serous engorgement; the crepitation will therefore reappear, constituting the "*rhonchus crepitans redux*" of Laennec. This sign, accompanied by the re-appearance of the respiratory murmur, and the absence of the dull sound on percussion, is pathognomonic of the resolution of hepatization.

3d Stage—Purulent Infiltration.—Laennec asserts that the rhonchus crepitans equally announces the resolution of the disease even in this state, but that it is ordinarily preceded by mucous or sub-mucous rattle, indicating the softening of a part of the pus. He says, also, that the respiratory murmur always appears more tardily.

When peripneumonia has attacked a large portion of the lung, the resolution occurs first in those parts which were the last affected. The resolution has sometimes, although I believe very rarely, taken place in the inverse order.

4th—Vomica.—We know but too little of this stage to be able to give the exact signs

of its resolution. There can be but little doubt that when it does happen, all the signs previously described must gradually disappear, and give way to the natural respiratory murmur.

5th Stage—Gangrene.—Resolution may take place even in this stage: the serum engorging the lung totally disappears, and with it its sign of crepitation. I have found pectoriloquy disappear also—no doubt from the union of the sides of the gangrenous excavation. A young sailor, in the wards of this hospital, was the subject of this formidable disease: we were enabled to trace all the signs, almost from the commencement, to excavation of the pulmonary substance. In four or five months he was discharged. In a year afterwards he returned from a voyage, and presented himself at the hospital in robust health. The previously existing pectoriloquy had completely disappeared.

Functional Signs of Peripneumonia.

Pain.—This is a very uncertain symptom: sometimes it occurs, sometimes it does not; when present, it usually is deeply seated, and of considerable extent; occasionally it is found only in a fixed point, and if it be acute it generally arises from pleuritic combination.

Dyspnœa.—This symptom varies according to the quantity of lung affected: if the inflammation be slight, the number of respirations are but slightly increased; if it be very extensive, I have seen, especially in children, the number augment to sixty or seventy in a minute, and the distress and danger of suffocation then become extreme.

Cough is often present, although occasionally it is so slight that the patient does not notice it.

Expectoration.—When expectoration takes place—for it is not of constant occurrence—it becomes so characteristic, that Laennec believed that from it alone the disease might be detected. The sputa, which he calls *glutinous* or *pneumonic*, collected in a flat open vessel, as a plate, form a mass so tenacious and viscous that if the vessel be reversed when full, the expectorated fluid separates, or is detached from it, with difficulty: it trembles, something like a jelly, upon agitation. The colour of the sputa varies—it may be red, or rusty, sea green, orange, saffron, yellow, or of a dull green: these colours are often intermixed. The expectoration "en masse" has something of the transparency of horn, or of white of egg slightly coloured; it contains bullæ of air of unequal size, and in large quantities. This state of expectoration seems to take place only in the first stage of peripneumonia or engorgement.

But these characters are not always so distinct, for sometimes the sputa are less viscous, less coloured, and less spumous; at others, a small quantity of fawn-coloured glutinous matter may be seen mixed in a considerable mass of mucous or pituitous fluid: occasionally these glutinous sputa occur only in the beginning of the disease, and then but in small quantity.

During hepatization, the sputa vary in appearance: they are composed of viscous pituita, or white or semi-opaque yellow mucus: they are still more mucous in character when purulent infiltration supervenes; sometimes mixed with yellowish striæ, indicating, probably, the presence of pus: rarely, indeed, is the whole of the matter expectorated puriform.

The expectoration in gangrene of the lung is so characteristic that when once met with, it will be impossible to mistake it; for the odour is so fœtid and peculiar that it is almost insupportable. I have known the breath of a patient infect the air of the whole house, so that it was hardly bearable by its inmates. The colour of the gangrenous sputa varies exceedingly: it is sometimes of a bright yellow, or green, brown, or of a milky white. I have seen, in two instances, a yellowish green substance, mixed in streaks or large spots, with a matter as black as ink. The consistence of the expectoration is that of pus, although sometimes it is much thinner.

General Signs of Peripneumonia.

1st Stage—Engorgement.—It is to this state of the lung that the term inflammatory ought, I think, really to be restricted, for hepatization, purulent infiltration, and vomica, are merely consequences of engorgement, as much as abscess is a consequence or termination of subcutaneous cellular inflammation. The general as well as local signs of engorgement are also very different from those of the other stages of peripneumonia.

Thus this stage is ushered in by an access of acute inflammatory fever, usually intense, except the peripneumonia be slight and partial. The face becomes coloured of a vivid red in the first instance: if the disease be severe, the redness becomes mixed with a livid, slaty, or bluish tint, consequent upon venous congestion. The pulse is rapid, full, and hard; the blood usually presents a thick buffy coat, and the crassamentum assumes a cup-like form. As the inflammation extends, various congestions occur, but principally towards the cerebrum, so that delirium is often induced in young persons, coma in old, and convulsions frequently in children. The tongue is often intensely red, which, according to Broussais, indicates

gastric sanguineous congestion or inflammation. The urine is high coloured, and small in quantity, and towards the termination of the febrile symptoms, diarrhœa occasionally supervenes.

This symptomatic fever ceases upon the diminution of the inflammation of the lungs. If, however, the febrile state depends upon other co-existing causes, or if it be of the character called essential, then it often remains with unabated force after the peripneumonia has diminished or even ceased.

2d—Hepatization.—Usually, the inflammatory fever now disappears, and dyspnœa alone remains, although commonly with diminished intensity: the difficulty of breathing also soon ceases, as the resolution of the hepatized lung takes place. But it will occasionally happen, gentlemen, that you may meet with cases supposed to be consumptive, but in which the symptoms depend upon the long duration of the hepatization: thus there is dyspnœa, cough, expectoration, emaciation, an habitually rapid pulse, a slight fever in the evening, and even occasionally night sweats, although rarely so profuse as in phthisis. Examine your patient, and you will now find the value of auscultation, by discovering that there are no local signs of tubercular disease, but that one or other of the lungs is hepatized, perhaps to half or more of its mass. This state is often *curable*, and I have no doubt that many patients have been considered to have recovered from pulmonary phthisis, when they have really only been affected with hepatization of the lungs.

3d and 4th Stage—Purulent Infiltration and Vomica.—The general symptons of these states have not been sufficiently observed, but most probably they are similar to those of chronic hepatization.

5th Stage—Grangrene.—The general signs of gangrene vary; for they may be of exactly opposed characters: thus, when the disease attacks the young and plethoric, it may be accompanied by all the symptoms of inflammatory fever; if the weak or aged, it may be, and is most commonly, combined with a general asthenic condition of the system, indicated by extreme prostration of strength, and great anxiety. I have frequently seen the dyspnœa very slight, and bearing no proportion to the extent of the local, or the intensity of the general signs.

Combination of Peripneumonia with other Diseases.—Peripneumonia may be combined with pleurisy, with hæmoptysis, and with œdema pulmonum; all of which complications we shall speak of when we arrive at the consideration of these diseases.

The sero-sanguineous congestion of the lungs, which occurs so commonly in the agony of death, is often transformed into peripneumonia, if that agony be long.

Peripneumonia and catarrh are not unfrequently combined; this combination often prevailed in the influenza of last year, and in that of 1803. This is the *peripneumonia notha* of the old authors.

Tubercular disease is occasionally accompanied by inflammation of the lungs. This will be particularly indicated by the supervention of any sudden and unusual febrile attack upon the ordinary symptoms of phthisis; it is accompanied also by as sudden an increase of the dyspnœa.

There are few fevers in which peripneumonia may not occur during their course, as in measles, particularly towards the disappearance of the eruption; in the course also of confluent small-pox, or erysipelatous fevers. I have seen peripneumonia come on during the progress of continued fevers, either of the synochoid or typhoid forms, and such complications are by no means infrequent.

Inflammation of the lungs occasionally takes place during the course of pertussis; two years ago this complication existed epidemically.

Causes of Peripneumonia.

Individual.—Although the disease is always more intense in young persons of sanguine temperaments, yet it appears to occur much more commonly in old people, in whom, according to Laennec, it runs much sooner into the suppurative stage.

Peripneumonia very frequently attacks infants; it usually exists then in the lobular form, and the disease is generally fatal to them in the stage of engorgement.

External.—The external causes are the same as in those of other inflammations—as cold, sudden changes of temperature, &c. The bite of the rattle-snake is said to induce inflammation of the lungs. The disease is most common in winter.

The causes of gangrene of the lung are at present hidden in the most complete obscurity. I believe I can say to a certainty that it is not a contagious disease.

Treatment of Peripneumonia.

I shall speak of the various remedies that have been employed in what I conceive to be the order of their importance.

1st Stage — Engorgement. — Bleeding. — There is scarcely any remedy so powerful in its effect upon peripneumonia as bleeding. It is in the stage of engorgement, particularly when accompanied by general febrile excitement, that blood should be abstracted promptly and freely, and you will find, even as it flows, that the dyspnœa will diminish, and the patient express

himself relieved. It is the practice in this country to bleed the patient in an upright posture, and to make a large orifice in the vein, so that fainting may be speedily induced. Experience has shewn that a greater impression is made upon inflammatory diseases by this method, and that a cure can be thus effected by a less loss of the vital fluid than if a larger quantity be abstracted in a small and slow-flowing stream. It often happens after a single bleeding, that the dyspnœa recurs with febrile reaction, and a full pulse; it will then be necessary to repeat the venesection, perhaps even three or four times, before the inflammation be subdued. It is impossible to give any other general rule as to the extent you may bleed, but that you must be guided by the intensity of the symptoms, and by the strength of the individual.

Leeches and cupping may frequently be used with advantage, when the weakness of the system contra-indicates a general bleeding.

Tartar Emetic.—Antimony, in its various forms of preparation, has been long used in medicine, and as an emetic, particularly, in peripneumonia. But it was reserved for Rasori to point out the special advantage of the tartar emetic in inflammation of the lungs. I shall not enter here into the theory of *contro stimulus*, by which he attempts to explain its action, but proceed at once to the description of the mode in which you should use it, premising by saying that there is no medicament so decisive in its action in combatting this disease.

Laennec, immediately after bleeding his patient, gave a grain of tartar emetie in two ounces and a half of a slight and cold infusion of orange flowers, sweetened with half an ounce of syrup of mallows, or orange flowers. He repeated this dose every two hours, until the patient had taken six grains, and then suspended the use of the remedy for seven or eight hours, if the symptoms were not urgent, or there was a disposition to sleep. If the symptoms were distressing, and the head became affected, he repeated the medicine in the same way, until an amelioration took place, sometimes, in severe cases, gradually increasing the dose to as much as two grains and a half.

Many patients bear the tartar emetic without its producing either vomiting or purging: most, however, vomit two or three times, and are purged during the first day, but commonly afterwards they *tolerate* the remedy perfectly. If they do not, then the addition of a little syrup of poppies, or a few drops of the tinct. opii, with the first few doses, occasions it to be borne easily.

If the first dose produce vomiting, the subsequent doses will doubtless often produce the same by mere association of ideas, and the patient will have considerable repugnance to taking his medicine. It is best to obviate this: I therefore, after freely bleeding, commence with one-third of a grain of tartar emetic in half a wine glass full of water, adding a few drops of tinct. opii, or syrup of poppies. I give two doses at the interval of one hour from each other; I then increase the quantity by another third of a grain for the next two succeeding hours, omitting the opiate, if no sickness be induced, and so on successively, by the addition of a third of a grain every two hours, until I arrive at two grains. I have not exceeded that quantity, although I have continued it for many days without producing any injurious effect.

You will often find, gentlemen, in following this plan, the disease will be considerably relieved in three or four hours, sometimes, however, not for twenty-four or thirty-six hours: according to my experience, the tartar emetic always acts best when it produces no effect except upon the inflammation itself; that is, when it occasions neither vomiting, purging, or depression of the powers of the system. It has been supposed by many, but erroneously, that it cannot subdue the disease except by previously producing these effects.

There is, perhaps, no stage of peripneumonia in which the tartar emetic may not be employed with some advantage, but it is certainly of most use during the engorgement of the lung. You will be called, gentlemen, to cases in which bleeding, perhaps, has been already carried to its fullest practicable extent, or where, in old and cachectic persons, venesection is no longer admissible; then you will find the tartar emetic, carefully administered, produce frequently the most astonishing curative effects. I have frequently left patients under the impression that their recovery was almost impossible, and yet have found that the continuous use of this medicament has snatched them from the jaws of death.

Laennec recommends that the tartar emetic should be continued until all signs of crepitation be merged into the natural respiratory murmur. This is not my practice: I am guided by the cessation of dyspnœa alone; for as he has himself observed, a non-inflammatory serous infiltration of the pulmonary tissue will supervene, and give rise to crepitation, after the inflammatory engorgement has totally disappeared.

Mercury.—Before I had occasion to see the admirable effects of tartar emetic in the first stage of peripneumonia, I freely employed mercury after bleeding: this

remedy sometimes produced a good effect, but it very frequently did not: it, however, is of great use when the lungs become hepatized, as I shall presently describe. In comparing the effects of tartar emetic and mercury upon acute inflammations, I have no hesitation in saying that the first seems to act most energetically upon those of the parenchymatous tissues of the organs, the second upon those of the serous membranes.

Blisters.—Counter-irritants ought not to be applied in the first stage of the disease, especially if there be much febrile irritation; they only tend to increase the distress, and produce rarely any effect in diminishing the dyspnœa: when, however, the heat of the skin diminishes, the pulse becomes less frequent and full, and a sense of infarction or oppression exists in the chest, with difficult expectoration, then blisters, or other counter-irritants, are of great utility.

Evacuants.—It is useful to keep the bowels gently open, but free purging is rarely of service. Emetics were formerly employed, and, it is said, with much success; but, most probably, that success must have arisen in cases where the peripneumonia was combined with derangements of the digestive organs.

Alkaline Plan.—Under the supposition that inflammation depended upon a certain plasticity and thickness of the blood, alkalies were proposed for the purpose of attenuating that fluid: thus the subcarbonates of potash, soda, and ammonia, medicinal soaps, the purgative neutral salts, were administered; but these remedies, as well as the plastic theory, have become obsolete: the polygala virginiæ has also been highly vaunted, but I have never seen it produce any good effect.

Expectorants. — The ipecacuanha is an useful expectorant in all the stages of peripneumonia, especialy in children: the squills or ammoniacum should not be used except in old or cachectic persons, and then only towards the resolution of the disease.

Regimen.—The regimen during the state of engorgement must be strictly antiphlogistic; no stimulants should be given, but the patient should have a free supply of cool drinks. The room ought to be kept cool, for if its temperature be high it will certainly tend to aggravate the disease. I need not say that the most perfect repose should be enjoined, and that the patient should be permitted to speak as little as possible.

Hepatization of the Lung.—Hepatization of the lungs occasionally becomes a chronic affection, lasts for many weeks, and produces a train of symptoms simulating frequently phthisis. You will recollect, gentlemen, that in this case the air-cells are filled with a solid matter, and our first indication is to occasion its absorption. I have tried the tartar emetic, iodine, and mercury, with this view, but I have found the last incomparably the best remedy, if properly administered.

As the constitution is usually much impaired in this state of the lung, when the disease has become chronic, and as there is frequently a strong tendency to gastric and intestinal irritation, you will find the blue pill in five grain doses, combined with a third of a grain of opium, three times a day, one of the best means of affecting the system: if, however, there be purging, then rubbing in the mercurial ointment is still better. These means should be carried on until the mouth be rendered slightly tender, and it should be kept so for two or three weeks: the remedy should be then discontinued for a week or two, otherwise it will irritate and exhaust the patient; you will then recommence it, and this alternating plan must be carried on until the resolution of the lung be complete.

The patient during this time should have a moderately nutritious diet: thus I allow a little meat once a day, and a free use of milk, but no other drink stronger than water. You should watch closely the state of the circulation, general appearance, and dyspnœa, so that if the pulse becomes full, and the difficulty of breathing increases, a few ounces of blood may be abstracted, and the diet diminished, endeavouring thereby to establish an equilibrium between the quantity of blood sent into the lung and the quantity of air the cells contain.

The next circumstance you should attend to, is to keep your patient in the most perfect state of repose, both in mind and body; allow no exercise, otherwise the blood will be driven into the diseased lung with too great rapidity: indeed, I always endeavour to make the patient understand the nature of his case, the objects I have in view, and consequently the positive necessity of absolute repose, and you will generally find he will readily submit.

Counter-Irritants.—I usually also keep a blister open from time to time on the surface of the chest of the side affected.

Gangrene of the lungs requires two modes of treatment, varying according to the general state of the system. In some cases, although the least frequent, it is accompanied with inflammatory fever, and then you must treat it on the antiphlogistic plan. But when you meet it combined with great asthenia, then the affection must be treated upon the tonic and stimulating methods, as by wine and bark, &c.

THE ANATOMY AND PHYSIOLOGY OF THE LIVER.

By Francis Kiernan, Esq.

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[Continued from p. 332.]

Of the Hepatic Veins, and of the Hepatic-venous Canals.—The hepatic veins are contained in canals, which may be called the hepatic-venous canals; they commence in the interior of the liver, and terminate at the fissure of the inferior cava. Those containing the hepatic trunks are formed by the capsular surfaces of a limited number of lobules; those containing the sublobular-hepatic veins, are formed by the basis of all the lobules.

As three vessels are contained in each portal canal, and as a branch of each vessel makes its exit from the canal at each interlobular space, each vessel neeessarily forms a plexus, by which it is brought into apposition with all the spaces on the surface of the canal: but one vessel only, an hepatic vein, being contained in each hepatic-venous canal, the external surface of the vein is in contact with, and connected to, all the lobules forming the parietes of the canal, the intralobular veins, at their exit from the lobules, entering the sublobular-hepatic veins without uniting in the canals to form branches similar to the vaginal branches of the portal vein, duct, and artery. The interlobular branches of the vein and artery conveying blood to the lobules, correspond to the intralobular branches of the hepatic veins, which convey the blood from the lobules; the former arise from the vaginal branches, the latter terminate in the sublobular-hepatic veins. Thus we find that the hepatic veins have no branches corresponding to the vaginal branches of the duct, portal vein, and artery; and as Glisson's capsule is composed of the vaginal vessels ramifying in cellular tissue, we consequently find nothing similar to this capsule around the hepatic veins, these veins having no vaginal branches. In the smaller portal canals, in which the spaces are less numerous and the plexus less complicated, one side of the portal vein is in contact with the parietes of the canal. On this side the interlobular branches arise immediately from the vein, and the cellular tissue is in small quantity, forming a delicate membrane on the walls of the canal; on the opposite side, which is separated from the walls by the duct and artery, vaginal branches arise from the vein, and the cellular tissue is abundant. (Fig. 4.; see our last No. page 332, and also Fig. 5, to be given in our next.) These smaller portal veins resemble the hepatic veins on that side on which they are in contact with the walls of the canal, on which no vaginal branches are given off, on which the interlobular branches arise immediately from them, and on which there is no capsule; they resemble the larger portal veins on that side on which vaginal branches arise from them, and on which the capsule consequently exists. From the absence of vaginal branches on one side of these portal veins, it may be presumed, that should a portal vein be found entering the liver unaccompanied by a duct and artery, it would, like the hepatic veins, be connected to the parietes of its canal, and would, like these vessels, have no vaginal branches, and, consequently, no capsule. The structure and uses of Glisson's capsule are now fully explained, it being evident that the loose connexion of the ducts, portal veins, and hepatic arteries, to the substance of the liver, arises from the circumstance of the three vessels ramifying in the same canals; and that the adhesion of the hepatic veins to the substance depends on one vessel only being contained in each hepatic-venous canal.

Numerous minute orifices are seen on the internal surface of the sublobular-hepatic veins; these orifices are the mouths of the intralobular veins, all of which terminate immediately in these vessels. Every orifice corresponds to the centre of the base of a lobule; the number of orifices is therefore equal to the number of lobules forming the parietes of the canal in which the vein is contained. As an intralobular vein makes its exit from the base of every lobule, and as every intralobular vein terminates in a sublobular vein, it is evident that the base of every lobule is in contact with a sublobular vein, and that the hepatic-venous canals containing these vessels are formed by the bases of all the lobules of the liver. The parietes of the portal canals are also composed of lobules; but they are composed of the capsular surfaces of lobules, and not of the bases, nor do all the lobules enter into their formation as into that of the hepatic-venous canals; for, as the interlobular ducts, veins, and arteries, ramify in fissures continuous with each other throughout the liver, many of these vessels terminate in lobules situated at a distance from the trunks from which they arise, these distant lobules not contributing to form the canals containing the trunks. As all the lobules unite to form the hepatic-venous canals, and as a certain number only enter into the formation of the portal canals, it is evident that the former are more numerous than the latter.

In the description of the lobules, the

hepatic veins contained in canals were divided into two sets, into the sublobular-hepatic veins, and the hepatic trunks. The coats of the former are delicate in texture; they are transparent; the lobules and fissures are seen through them; their internal surface is studded with the orifices of intralobular veins; their canals, which are formed by the bases only of lobules, are not lined by prolongations of the proper capsule. The trunks are more dense in structure; their external coat is composed of longitudinal bands; their canals are lined by prolongations of the proper capsule, which render them opaque, the lobules and fissures not appearing through them; they receive no intralobular branches. Dense in structure, they are not adapted to receive these minute and delicate veins; their canals, therefore, unlike those containing the sublobular veins, are, like those containing the portal veins, composed of the capsular surfaces of lobules, the intralobular veins of which terminate in a neighbouring sublobular vein.

If the internal surface of the large veins, which open into the trunks, be examined, and contrasted with the internal surface of a sublobular vein, the orifices of the intralobular veins will be found less closely arranged in the former than in the latter. This appearance arises from two causes. Two or three intralobular veins, at their exit from the lobules, frequently unite and form one vein, which terminates in the large vein, on the internal surface of which will be seen one larger orifice, instead of three smaller orifices. Frequently, also, on the surfaces of these canals the capsular surfaces of lobules are seen, the bases of which enter into the formation of a neighbouring canal; no orifices, therefore, corresponding to the bases of these lobules, are found in the veins under examination.

The intralobular veins will almost invariably be found entering the sublobular veins from the centre of what has been called the red substance of the liver.

Of the formation of the hepatic-venous canals it may be said, that the smallest of the canals, and the greater number of them, are formed by the bases alone of lobules; that the next in dimensions are formed by the bases of some, and the capsular surfaces of other lobules; and that the largest are formed by the capsular surfaces only of these bodies. As the base of every lobule rests on a sublobular hepatic vein, it is evident that those lobules, the capsular surfaces of which enter into the formation of canals, are in contact with two hepatic veins.

Ramifying in fissures which are continuous with each other throughout the whole liver, the interlobular branches of the portal vein anastomose freely with each other, enveloping every lobule in a venous web: the intralobular branches of the hepatic veins, on the contrary, confined within the lobules, have no direct communication with the corresponding branches of the surrounding lobules, from which they are separated by the substance of these bodies, and by the intervening interlobular ducts, veins, and arteries, situated in the interlobular fissures; and one intralobular vein can be injected from another only through the medium of the intervening portal veins. When injected with mercury or size, the intralobular veins appear in the centres of the lobules in the form of points, stellæ, or twigs; these veins, therefore, unlike the interlobular portal veins, do not anastomose with each other. If, by means of a pipe and glass tube, mercury be thrown into a large hepatic vein on the surface of a section, it will return by several smaller neighbouring hepatic veins, which, generally, are branches descending to terminate in the larger vessel in which the pipe is fixed. If these vessels be tied, the mercury will return by large hepatic veins, situated at a distance from the injected vessel, and not branches of it. In this experiment the force used is not sufficient to propel the mercury through the intervening intralobular, lobular, and interlobular veins, and by such means to form a communication between the two hepatic veins; for if force sufficient to effect this were used, the mercury would return by portal as well as by hepatic veins, which is not the case. If the inferior cava be opened at its posterior part, and if by the same means mercury be thrown into a small hepatic vein, it will immediately return to the cava by other hepatic veins, without appearing in the superficial intralobular veins, and without passing into portal veins. From these experiments it appears that the sublobular veins anastomose with each other, and that their intralobular branches do not.

By contrasting the hepatic veins with the portal vein, we find that no two intralobular branches of the former anastomose with each other; that the interlobular branches of the latter form one continuous plexus throughout the whole liver; that the sublobular veins anastomose directly, and not through the medium of the intralobular branches; that the portal veins have no direct communication with each other, but anastomose by means of their interlobular branches; that the hepatic veins, like the other veins of the the body, proceed in a direct course to their termination in the cava; that the portal vein, ac-

companied by an artery, resembles an artery in its ramifications; that the larger hepatic veins, having longitudinal fibres in their coats, differ in structure from the portal vein; and that the blood contained in the liver after death is almost invariably found in the hepatic veins, the portal vein being usually empty.

The longitudinal fibres in the coat of the larger hepatic veins are similar to those in the coats of the iliacs and inferior cava, and to those which are occasionally seen in some superficial veins. Those of the iliacs and cava have been delineated by Senac, who says they are composed of muscular fibres. This opinion, which was adopted by Portal, is sufficiently refuted by the existence of similar fibres in the hepatic veins, which, being firmly connected to the substance of the liver, admit of no motion.

The hepatic veins in the *Seal* differ in many respects from those of any other animal I have examined. The intralobular veins at their exit from the lobules do not, as in other animals, terminate immediately in the hepatic veins: these vessels enter the hepatic-venous canals, where they unite into branches, which, like the vaginal branches of the portal vein, are connected by a fine cellular tissue, with which they form around the hepatic veins a cellulo-vascular sheath, precisely similar to that surrounding the branches of the portal vein. The structure of the two sheaths is similar, but their uses are different. That of Glisson's capsule has been explained; the capsule of the hepatic veins in the seal appears destined to admit of the muscular contractions of these vessels. The posterior cava in this animal forms at the back part of the liver a large sinus, in which the hepatic veins terminate, and which, according to Cuvier, "is connected with the power of diving, which these animals possess in a high degree." The external coat of the hepatic veins is composed of circular fibres, which in the larger vessels form a complete tunic. In the smaller vessels the fibres are arranged in the form of circular fasciculi, which are connected with each other by oblique intermediate fibres. All the fasciculi do not extend completely round the veins; some, dividing into two portions, unite with fibres from those above and below, and form other fasciculi. By contrasting the hepatic veins in the seal with those in the human subject, it would appear that the circular bands in the former are composed of muscular fibres. In man, the fibres are longitudinal; in the seal, they are circular: in the former, the vessels adhere firmly to the parietes of their canals; in the latter, they are loosely connected by the cellulo-vascular sheath in which they are inclosed. The existence of the sinus in which these veins terminate, and in which the blood accumulates during the act of diving, appears to indicate the necessity of a muscular power to propel the blood onward to the heart. Had the intralobular veins in the seal, terminated, as in other animals, immediately in the hepatic veins, these vessels would have been connected to every lobule forming the parietes of their canals, and their muscular contractions could not have taken place; the use of their sheaths is therefore evident, and different from that of the portal vein, hepatic duct, and hepatic artery. No circular fibres exist in the coats of any of the other veins of this animal.

In the *Porpoise* the hepatic veins are connected to their canals; no circular fibres are seen in their coats. Their external surface is reticulated, the ridges corresponding to the interlobular fissures, where the interlobular cellular tissue is continuous with the cellular coat of the veins. The mouth of an intralobular vein occupies the centre of each space circumscribed by the ridges.

In diving-birds, Cuvier says, "all that portion of the vena cava inclosed in the liver is of very considerable diameter, and forms a kind of reservoir similar to that in the seal." I have examined some birds of this class, but have found no circular fibres in their hepatic veins.

Of the Structure of the Lobules. — The lobules constitute the secreting portion of the liver. Examined with the microscope, a lobule is apparently composed of numerous minute bodies, of a yellowish colour (imparted to them by the bile they contain) and of various forms, connected with each other by vessels. These minute bodies are the *acini* of Malpighi; his opinions respecting their structure and use are well known. Ruysch admitted the existence of the acini, and, more successful in his injections than Malpighi, he filled the minute vessels which are described by the latter anatomist as ramifying between these bodies; he thereby, probably, rendered the acini invisible, or less apparent than they present themselves in the natural state, in which they had been discovered by Malpighi, and he concluded that these minute bodies are composed of the terminal extremities of the vessels, with a certain number of which the ducts are continuous. Boerhaave attempted to reconcile the contending opinions of the two great anatomists. Ferrein successfully opposed these opinions; he demonstrated the tubular structure of the kidney, and was the first who asserted that several

other viscera, the liver, spleen, and renal capsules, "sont un assemblage merveilleux de tuyaux blancs, cylindriques différemment repliés." Maseagni says the liver is composed of cells, from which the minute biliary ducts arise, and this anatomist enters into a description of the various tunics of which these supposed cells are composed. To Müller, whose recent discoveries have thrown much light on the ultimate structure of glands, is due all the merit of the important discovery, that a gland is a duct with blood-vessels ramifying on its parietes. This anatomist asserts, from analogy rather than from actual demonstration, that the biliary ducts in the vertebrated, like those in some of the invertebrated animals, terminate in cæcal extremities, which present certain differences in the manner of their arrangement in the different classes. The foliated and pinnated appearances delineated in Müller's 11th plate, and displaying, according to this anatomist, the manner in which the terminal extremities of the ducts are arranged, appear to me to result solely from partial congestion of the liver, the foliated portions being composed of the non-congested opposed edges of lobules, with the interlobular ducts, veins, and arteries, ramifying between them.

The portal vein enters the liver in all the vertebrated animals, in all of which the lobules are arranged around the hepatic veins, as I have described them in man. Each lobule is composed of a plexus of biliary ducts, of a venous plexus formed by branches of the portal vein, of a branch of an hepatic vein, and of minute arteries: nerves and absorbents, it is to be presumed, also enter into their formation, but cannot be traced into them.

The hepatic ducts, commonly so called, and their vaginal and interlobular branches, constitute the excreting portion of the biliary apparatus; they are also organs of mucous secretion, being furnished with mucous follicles: the secreting portion of the liver is also composed of ducts, which form a plexus in each lobule. These plexuses may be called the lobular biliary, or secreting biliary plexuses. The ducts composing them being exceedingly minute, and always containing bile, much greater difficulty is experienced in injecting them than in injecting the blood-vessels of the liver, even in the usual manner; and this difficulty is not so easily overcome as that occasioned by blood in the vessels, for the bile contained in the excreting ducts is propelled by the injection into the secreting ducts, from which it has no exit by other vessels, and consequently opposes the entrance of the injection. This process is, to a certain degree, facilitated by tying the portal vein and hepatic artery in the living animal, and thereby arresting the secretion of the bile. If this operation be carefully performed, the animal will survive several hours, during which time the ducts will discharge much of the bile they contained, and the liver will sometimes become almost colourless. The experiment will probably be attended with more success if performed a few hours after feeding the animal. After preparing the liver in this manner, I have frequently succeeded in partially injecting the lobules from the hepatic duct; I have also injected these bodies from the duct in the human subject, but with less success. Examined with the microscope, the injected interlobular ducts are seen dividing into branches, which, entering the lobules, divide and subdivide into minute ducts; these ducts anastomose with each other, forming a reticulated plexus. (Fig. 6.) If an uninjected lobule be examined, and contrasted with an injected lobule, it will be found that the acini of Malpighi in the former are identical with the injected lobular biliary plexus in the latter, and the blood-vessels in both will be easily distinguished from the ducts. The ducts forming the plexuses, when examined with the microscope, present very much the appearance of cells; and this appearance, which has been well delineated by Maseagni, probably induced this anatomist to consider the liver as an assemblage of minute cavities, giving origin to the ducts. The form of the lobules bears no relation to the arrangement of the ducts, the form of each lobule being always correspondent to the branches of the intralobular hepatic vein occupying the centre of the lobule. The coats of the lobular ducts, on which the blood-vessels next to be described ramify, constitute the proper secreting substance of the liver, as the coats of the cortical ducts of the kidney, and those of the tubuli seminiferi, constitute the secreting substance of their respective organs.

The left lateral ligament may be considered as a rudimental liver, in which this organ presents itself to our examination in its simplest form. From that edge of the liver connected to the ligament, numerous ducts emerge, which ramify between the two layers of peritoneum of which the ligament is composed. These ducts were discovered by Ferrein, but this anatomist did not ascertain their termination. "A l'égard des vaisseaux biliaries, M. Ferrein en a observés de nouveaux, dont les uns reviennent du ligament gauche du foye, et qu'il a vûs quelquefois repandus sur la face inférieure du diaphragme." These ducts, the smallest of which are very tortuous in their course, divide, subdivide, and anasto-

mose with each other. They are sometimes exceedingly numerous, two or three of them in such cases being of considerable size; some of them, as Ferrein says, frequently extend to the diaphragm, and ramify on its inferior surface. They sometimes extend only half way up the ligament, where they divide into branches, which, forming arches, return and descend towards the liver, anastomosing, or being continuous, with other ducts issuing from it. The spaces between the larger, or excreting ducts, are occupied by plexuses of minute, or secreting, ducts. I have injected the ducts on the inferior surface of the diaphragm, but have not succeeded in injecting them to their termination; we may however conclude, that, like those just described, they form arches, the branches returning towards the ligament, and being continuous with those ascending from it. Branches of the portal and hepatic veins, with arteries and absorbents, also ramify in the ligament, which, including between its layers a plexus of secreting and excreting ducts, with blood-vessels ramifying on their parietes, admirably displays the structure of the liver. Ferrein speaks of other ducts: " d'autres reviennent de cette portion des parois de la veine cave, qui paroît hors l'échancrure sigmoïde du foye quand on le regarde par derrière, d'autres enfin reviennent des membranes de la vésicule du fiel." The inferior cava usually occupies a fissure at the back part of the liver; this fissure is frequently converted into a canal by a portion of the liver, extending from the lobulus Spigelii to the right lobe; frequently, also, the fissure is converted into a canal by a band, apparently of ligamentous texture, varying in width in different subjects. This band is, like the left lateral ligament, a transparent portion of the liver, containing ducts and blood-vessels. In a preparation in my possession, in which the ducts in this band are injected, a few injected ducts are seen issuing from the right lobe and ramifying on the coats of the cava above the band. The umbilical vein is also contained in a fissure, which is frequently converted into a canal by the process of the liver, called the *pons hepatis*, extending from the *lobulus quadratus* to the left lobe; sometimes the two lobes are connected by a band only, which is similar in structure to that behind the cava. No ducts ramify in the coats of the gall-bladder. It is probable that Ferrein mistook the absorbents of the gall-bladder for ducts, this anatomist, probably, having injected some of the former vessels, as I have frequently done, from the hepatic duct: or Ferrein may allude to ducts which occasionally ramify between the liver and gall-bladder, and divide into interlobular branches, which enter the former, and which he may have removed with the latter, and mistaken for ducts ramifying upon it. No branches of the hepatic veins ramify in the coats of the gall-bladder; and the absence of these vessels sufficiently proves the non-existence of ducts. The cystic veins are branches of the abdominal portal, and not of the hepatic portal or umbilical vein: they are therefore efferent, and not afferent, vessels, conveying blood from, and not to, the gall-bladder: it necessarily follows, that biliary ducts ramifying on the parietes of this receptacle would receive the materials of their secretion from arterial blood,—that of the cystic arteries. If in any case ducts should be found on the gall-bladder, I venture to assert, that branches of both the portal and hepatic veins will also be found; but the portal veins in such a case will be branches of the hepatic portal vein, will convey blood from the coats of the excreting ducts, and to the coats of the secreting ducts, and not from the gall-bladder. If ducts, arteries, and one set only of veins, terminating in either the portal or hepatic veins, should be found—and this is always the case, if Ferrein's assertion, that ducts ramify on the coats of the gall-bladder, be true—then would the bile of these ducts at least be secreted, beyond dispute, from arterial blood.

Branches of the hepatic artery and portal vein accompany the ligamentum teres; these veins convey blood to the hepatic portal vein, and must therefore be considered as separate branches of the abdominal portal system.

Of the Lobular Venous Plexuses.—The interlobular branches of the portal vein, surrounding the lobules on every side except at their bases, divide into branches, which, entering these bodies, form in each of them a plexus, the branches of which terminate in the intralobular hepatic situated in the centre of the lobule. This plexus, interposed between the interlobular portal veins and the intralobular hepatic vein, constitute the venous part of the lobule, and may be called the lobular venous plexus. Examined with a powerful microscope, the vessels constituting the plexus are seen converging from their origin at the circumference toward their termination at the centre of the lobule; they communicate with each other by smaller transverse branches, between which are seen minute circular, ovoid, or oblong spaces, occupied by portions of the lobular biliary plexus. (Fig. 7.) Examined with a less powerful microscope, the vessels of the plexus appear arranged in circles. The circular, ovoid, and oblong portions of the biliary plexus, seen between the branches

of the venous plexus, are the acini of Malpighi. Müller has delineated the converging vessels of the plexuses in the liver of the squirrel; but this anatomist did not ascertain whether they were branches of the portal vein or of the hepatic artery. The venous plexus of one lobule communicates with the plexuses of the surrounding lobules by means of the intervening interlobular branches of the vena portæ, this vein thus forming one continous plexus through the whole liver. The converging branches of each plexus unite at the centre of each lobule, and form an intralobular hepatic vein, this vein having no communication with the corresponding veins of the contiguous lobules, except through the medium of the intervening plexus and portal veins. No branches of the hepatic veins are found in any other part of the liver; occupying the centre alone of each lobule, their only office is to convey the blood from the lobular venous plexuses, and not from the arteries.

In consequence of its double venous circulation, the liver is naturally in a state of sanguineous congestion; hence arises the great difficulty of making successful injections of the human liver: the plexuses may, however, be frequently well, but seldom equally, injected, and always with greater success from the portal than from the hepatic vein, the latter, and those portions of the plexuses immediately surrounding its intralobular branches, generally containing whatever blood may remain in the liver after death. The plexuses may be always injected with facility from the portal or hepatic veins, and the injection will pass freely from one vein into the other without extravasation, if the liver has been previously deprived of all its blood by the ligature of the portal vein and hepatic artery in the living animal.

Anatomists have considered, that the free communications which exist between the two vessels obviate the difficulty which would otherwise arise in the circulation through the liver, from the want of power consequent on the presence of the two veins; and although the communications between these vessels appear, upon experiment, to be more free than those which exist between the hepatic artery and the portal vein, and between arteries and veins generally in other parts of the body, yet it appears that the arteries and veins in the spleen and kidney, and probably in all glands, communicate with equal freedom. The lobular venous plexus is best examined in the superficial lobules, but here again the human liver presents a difficulty, particularly in the adult, in consequence of the opacity of the proper capsule: the liver of the cat, and that of the smaller animals generally, appear to have no cellular capsule, and are consequently more favourable for this purpose.

The venous plexus ramifies on the biliary plexus: the blood circulating through it is composed of the portal blood, and certainly of that portion of the arterial blood which, having nourished the excreting ducts and supplied them with mucus, and having circulated through the vasa vasorum of all the vessels, becomes venous, and is received into the branches of the portal vein, by which, with the portal blood, it is conveyed to the plexus; and from this mixed blood the bile is secreted.

The vessels of the plexus ramify on, or as Müller says, between, the secreting ducts; they are not continuous with the ducts, as was imagined by Ruysch.

[The engravings referred to in the preceding pages will be given, with the conclusion of the paper, in our next number.]

[To be continued.]

OBSERVATIONS ON THE NATURE AND ORIGIN OF THE DISEASE CALLED PLICA POLONICA.

By Geo. Wm. Lefevre, M.D.
Physician to the British Embassy, St. Petersburgh.

[Concluded from page 337.]

It is evident, to me at least, that there is a disease in some parts of Poland which does not exist in other parts; although the moral and physical habits of the people are the same in both. This disease I divide into real and artificial: the former exists in the proportion, perhaps, of one-tenth to the latter. I shall first describe the artificial—the manner of producing it, and its final termination. During my residence in Poland, I had no opportunity of witnessing a plica pass through all its stages, from the beginning to the end; but I saw several, at various periods of their progress.

The artificial plica is fomented, as I have observed, with the idea of producing a critical discharge, which will relieve the system of some *peccant* matter, to make use of the old phraseology. This disease, when produced by artificial means, is confined to the head; and I know of no instance where means have been taken to form this in the hairs of

the scalp, that other parts of the body; have suffered naturally from the plica - nôr have I ever heard of attempts havt ing been made to produce this complain in the axilla, or on the pubes. This may, in some measure, help our diagnosis between true and false plica: in the formation of the latter, nothing more is neeessary than to allow the scurf and secretions of the scalp to accumulate. This is promoted by wrapping the head in flannel, which, keeping it warm, increases the natural seeretions of the scalp. The hair, in the course of time, elongating, and not being combed straight, aided also by the twisting of the night-cap, or flannel, becomes plaited together in various forms and shapes, and the interstices fill up with the exudations which come from the scalp, and from the myriads of animals which breed there unmolested. We will not instance an example furnished by Kirby and Spence, where servants were employed all day in carrying them away from the head of their master by baskets-full at a time; but I have seen them numerous enough. In the course of time, this contact with the secretions, which are probably of a morbid nature (for this means of forming a plica becomes derivative to a body already diseased), destroys the bulb of the hairs, and the whole mass, which now resembles a bird's nest (and a dirty one, too), forms so much extraneous matter. If unmolested, however, and left for a sufficient time, it falls off finally in a mass, "pushed from its stool" by the young healthy hair which sprouts up underneath. It is seldom allowed to finish its career in this manner. The patient watches the arrival of the new hair, and, as it increases, he cuts off piecemeal the old plica; or as I have more frequently seen the operation performed, a lock of the old hair is inclosed between two pieces of wire, and these are tightened daily, till it drops off.

I saw this process employed by a Jew: the only case I met with among the Jews. A singular fact is observed with respect to the nails, when the young hairs begin to shoot, and which I witnessed in the same individual; for his was originally a case of true plica, but, as in most instances, was changed in its real and natural character by artificial means. The nail, in these cases, no longer grows from the root: it becomes of a horny nature, and opaque, and finally shelves off, leaving a young nail underneath.

This, then, is the general way in which the plica takes its final departure, and woe to him who wishes to expedite the process too rapidly. Sudden death, blindness, palsy, apoplexy, deafness, idiotcy, are some of the ills which are said to follow invariably a sudden removal of the disease by excision.

In the history of this disease, as hitherto related, it is evident that there is nothing very extraordinary in its formation and progress—nothing to warrant the exsitence of a particular virus; nor, indeed, any morbid state in the hairs themselves.

If all the cases upon record are of the same nature as the foregoing, then, indeed, we may conclude, with Davidson and later French writers, that there is in reality no such disease as plica polonica.

If we are to believe the testimony of such as can have no interest in warping the evidence which nature presents, there is a disease of a different character, arising spontaneously, and not originally produced by artificial means, though too frequently changed in its appearance by the latter. It is that which occurs in the higher classes of society, and which attacks other parts of the body than merely the hairy scalp. Most wonderful cases are upon record of the extent to which this complaint proceeds.

The hair of the head is related by several to have been long enough to train upon the ground—to be three, four, and even six feet in length, and to extend laterally in proportion.

The beard is said, by Alibert, to have reached the same dimensions; and Dr. Corona knew a Polish hermit whose beard trained upon the ground when he lay in bed.

"Jean Hain rapporte l'observation d'une femme qui avoit les poils du pubis affectés d'une plique longue d'une aune et demie; il ajoute que la personne était obligée de la rouler autour de ses hanches, pour empêcher qu'elle ne traînat par terre."

These are what I imagine to be cases of real plica, and similar cases are rare in occurrence comparatively with the artificial plica already mentioned; still there are sufficient instances upon record to allow of the authentication of the disease. I could not, during a six months' residence in Cracow, find an opportunity of witnessing this affection in its early stages. All the cases which I saw, in

private families and in the public hospitals, were decidedly manufactured; but I knew those in high life, of all ages and of both sexes, who had suffered from the disease. The case of the Jew was a case of real plica, but it was only when the disease was far advanced that I saw it. I must consequently describe the appearance which the real plica assumes at its commencement from what others have told me, not being able to do so from personal observation.

We find in the descriptions which we read of it, a great variety of statements, as regards the changes in the structure of the hairs. Some speak of a glutinous matter exuding from the filament, if cut asunder; others have found blood issue from the divided ends, and the cutting of the hair itself is said to be productive of great pain. Others declare that, with all the assistance of the microscope, they could not discover any change in the structure of the hair itself, but merely an exudation from the scalp at the roots of the hair.

All this discrepancy of opinion arises from partial observations, from confounding the false with the real plica, from studying the affection at certain stages of its existence only upon different parts of the body. I shall quote the description given of this disease by a very popular writer, who has, nevertheless, in several particulars been misled by partial information.

"The individual hairs begin to swell at the roots, and to exude a fat slimy substance, frequently mixed with suppurated matter. Their growth is at the same time more rapid, and their sensibility greater, than in their healthy state; and notwithstanding the incredulity with which it was long received, it is now no longer doubtful, that where the disease has reached a high degree of malignity, not only whole masses of the hair, but even single hairs, will bleed if cut off, and that, too, throughout their whole length, as well as at the root."

We cannot coincide in the truth of every part of this quotation. It is true that the roots of the hair become extremely sensible; but the filament is not so itself, nor is pain produced by cutting it throughout its whole length. With respect to the bleeding from the ends of the divided filaments, I found so much contradiction in the evidence to be procured upon the subject, that I could not convince myself that such was the case. It is more probable, I think, that the scalp becomes diseased and very sensible, and that blood issues from the roots of the hair when they are pulled out; but I do not think that the individual hairs ever become injected throughout their whole length.

The hair is not, as it was long supposed, an inorganic substance; it possesses vitality, although slightly comparatively with other parts of the body; and derangements of the general system may influence the hair individually. The degrees of vitality and sensibility are not the same in all textures at all times. Inflammation changes an almost insensible healthy, into an acutely sensible diseased membrane; so it may be with the hair, which, possessing little vitality or sensibility in a natural state, may acquire both under diseased influence.

In referring to the authors who have written upon the hair, we find some curious cases, in which its colour even has been changed by fevers, and even by passions and affections of the mind.

Rudlein relates the circumstance of a patient's hair becoming yellow, after a fit of the jaundice.

Dr. Tourron, of Thoulouse, instances the case of a woman, thirty-six years old, who was attacked with a brain fever, and whose hair and eye-brows got white during her convalescence, but returned to their original black colour when they were quite restored.

M. Alibert mentions the case of another woman, whose hair was fair, but after a severe illness and accouchement it became black.

The effects of fear and terror in changing the hair to white, has occurred in more than one instance in modern times. Such effects could not be produced upon inorganic matter; and we find that the centre of each hair is perforated by a fluid, which imparts to it vitality. If the hair be organized, and this seems placed beyond doubt, it may be subjected to the diseases of organized structures, and the roots of the hair may be penetrated by diseased fluids secreted from the scalp, and which eventually produce disease in the hair itself. It is probably the escape of some of this diseased secretion from the hair, when divided near its root, which has given rise to the opinion of its bleeding.

This applies, therefore, to that state of the system which is found to occur in

that species of plica which is formed originally by diseased secretion, and is not produced artificially. This affects all parts of the body where the hair abounds, whereas the artificial plica is confined to the head, where alone it has been fomented.

A minuter examination will discover the difference between the true and artificial plica, as cognizable in the structure of the hairy filaments. The bulbs of these are enlarged from the commencement in the true plica, and the disease affects them individually. The hairs become enlarged from the increased quantity of fluid injected into them, or from some change in the nature of their proper fluid, produced by disease. It is from this circumstance that the hair, if not meddled with, nor allowed to be compressed, so as to form a mesh, sticks out like a pole: hence the popular name *koltun*. If situated upon the head the disease is easily recognized from the false plica: the roots and bulbs of the hair are found diseased as they issue from the scalp itself; whereas in the bird's nest plica, the turban plica, the medusa plica, all of which are produced by art, there is a considerable length of sound hair between the scalp and the plica; and if a single hair be separated from the mass, it will be found in a healthy state.

The interlacing and matting of the hair are not necessary to characterize a true plica, but this is often produced by the same means as are used to form an artificial plica. Hence to a superficial observer both appear the same; hence the existence of the true plica has been called in doubt, because it is similar in appearance to the artificial plica; and hence truth and error become confounded in one common mass.

Let those who are still sceptical upon this point, and who do not believe in the existence of the true disease, answer this simple question. Have they ever known an artificial plica formed in the axilla, or on the pubes? What name do they then give to that disease which affects the hair upon these parts, in the manner which we have described?

In recapitulation, therefore, we must observe, that we do not believe the plica polonica to be an imaginary disease, resulting only from filth; neither do we believe it to be contagious, and capable of propagation by inoculation; but we believe that it is a secondary affection, a species of critical evacuation, which becomes a source of irritation, and produces disease in the hairy filaments.

That the greatest proportion of what are called plicas are the result of art, is undeniable; and it is equally so, that the generality of observers, in passing through the country, have been satisfied with unravelling these false plicas, and have supposed that they have unravelled the whole mystery.

It remains to inquire into the causes of the real disease, in doing which, the manufacture of so many artificial ones will be easily accounted for. In endeavouring to discover the real cause of this malady, we shall refer to the works of an author who has thrown much light upon a very obscure subject, and has, like most original writers, incurred the charge of eccentricity and exaggeration: we refer to Dr. Macculloch's work on fevers and neuralgia, arising from the influence of Malaria. That many affections are, in their causes and characters, difficult to trace and distinguish, is the result of every man's practice. It is not *nosological disease* which is the most difficult to treat; there are a variety of uneasy affections and sensations which baffle us all in our practice: hence the tyro becomes astounded and humiliated at the very onset of his career, to find himself, with all his learning, unable to account for the cause of so common a complaint as the toothache. His Cullen's Nosology stands him in bad stead for a practical guide; he enters upon the wide manor, and finds but little legitimate game to exercise his skill upon; he is assailed by a multitude of complaints which he has neither read of in books, nor heard of in the lecture-room. It is not the tyro alone who has to struggle against these difficulties; it is, perhaps, the octogenarian, going down to his grave disgusted with the idea that a life has been devoted to a profession of which he feels that he knows so little.

Dr. Macculloch has endeavoured, in his work, to pour the oil and wine into his wounds, and to apprize him, even at the eleventh hour, that there is a balm in Gilead. As a sweeping clause, the Doctor considers "all fevers which are not produced by contagion, to be the result of malaria." He dwells at some length upon the direct and indirect effects of this poison upon the system, as it is evident in producing intermittent and remittent fevers, and as it is more obscure in its action, as producing a

great variety of anomalous sensations and complaints, all of which, however, may be reduced to a simple cause, and will be found to have a remittent fever for their basis, and malaria for their excitement.

From the general effects of malaria upon the system, producing remittents and intermittents with all their obscurities and anomalies, Dr. Macculloch proceeds to local affections, which he attributes to the same cause. These are extremely numerous, and comprise all those local pains and aches which occur in the body, and are inexplicable both to the patient and the practitioner. They come under the head of tic douloureux when they affect the more tangible nerves, or their obvious branches—as in the face, the arms, the fingers, knees, legs, toes, &c. There are other local affections, which, although not so easily traced to a direct nervous filament, are equally included in this list, because the expansion of a nerve upon a muscle is equally susceptible of this disease, which the Doctor denominates rheumatic neuralgia, intermittent in its character and produced by malaria.

It remains only to determine whether the plica polonica is not to be added to the number of these obscure affections.

The locality of this disorder offers every ground for regarding it as the offspring of malaria. It is found almost always in marshy situations, and on the banks of rivers. The more common effects of malaria are found most prevalent among the inhabitants of the marshy swamps where plica is endemic. I never met with so many cases of ague as during my stay in Poland, and this of a severe and fatal kind. Rheumatism is as prevalent as agues, and affects every part of the body, and becoming chronic in the limbs, renders them useless. It attacks the head most severely, and tic douloureux in the face is of frequent occurrence. Rheumatic ophthalmia and amaurosis, in a gouty diathesis, are of common occurrence. Mr. Russell, speaking of the plica, says, "it is generally preceded by violent headaches and tingling in the ears; it attacks the bones and joints, and even the nails of the fingers and toes, which split longitudinally. If so obstinate as to defy treatment, it ends in blindness, deafness, or in the most melancholy distortions of the limbs. The most *extraordinary part of the disease is its action upon the hair.*"

In this last phrase, the author states an opinion which has the more weight as it comes from an unprofessional man, unbiassed by any theories. The plica is here stated to be a general affection, the state of the hair a symptom only.

Paralytic affections are very frequent in the same unhealthy situations.

If all these constitutional symptoms, which are said to precede the formation of a plica, are, as Dr. Macculloch informs us, attributable to malaria, I do not see why the affection of the hair should be excluded from the list. The same poison which operates in producing an affection of the scalp may certainly influence the roots and bulbs of the hair. It is, indeed, singular, that he who discovers this protean cause of so many complaints where it is difficult for others to trace its influence, should not himself have discovered it here, where it is so much more ostensible.

If it be asked why malaria should produce this disease in one country and not in another, it may be replied, that many circumstances, at present inscrutable, influence the effects of this poison upon the system. Why should it attack the testicle in one, and the kidney in another? Why the great toe or the little finger? Why the supra-orbitary nerve or the portio dura? Why produce a slight ague or a deadly remittent? Why a dysentery or a cholera morbus?

To such questions we can only oppose a set of unmeaning terms, as predisposition, endemic fomites, habits of body, difference of constitution, climacteric influence, which answer the same purpose in medical language as capacity for caloric or latent heat, do in chemical; or as length without breadth does in mathematical definition.

We have as much right to conclude that there is some peculiarity in the climate or in the soil, or in the habits of an individual, which causes malaria to operate in producing koltun in one situation, as that it shall produce a rheumatic ophthalmia or a fever in another; for the effects of diseases in general are not so much to be studied in their own peculiar and specific characters, as in the various circumstances under which they operate.

It may be inferred, I think, from the preceding observations, that the custom of the people in promoting plica has arisen from the relief afforded to their pains and aches by the generation of a true plica. They have observed that when the hair became thickened, and as-

sumed an appearance of a stake, long and tapering towards the extremity, so the affection of the system which preceded this state began to disappear, and consequently whenever they are attacked with any severe rheumatic complaint in the head or limbs, or when their eyes become diseased, they immediately set about manufacturing an artificial plica. This produces a less speedy relief to their complaints than when a plica is the natural result of a critical discharge from the scalp, but it nevertheless produces a good effect from its slowly derivative action. The enveloping the head with flannel, and the other accessory means which time effects, keep the scalp in a state of fermentation.

From the whole, therefore, we conclude that the constitutional affections of the system are the produce of malaria, and that the local affections are generated indirectly by the same cause. The plica is therefore produced by a morbid secretion from the parts in which the hairs are imbedded, which penetrates the hairy filaments and produces disease; but this, which becomes the exciting cause of a local disease, is the critical termination of a constitutional malady. This natural process, which affords relief to the system, and becomes, in fact, the cure of painful affections, is imitated by the people so universally upon all occasions where they suffer from pains and aches, that the number of false plicas is in immense proportion greater than those produced by the efforts of nature in the process of critical discharges, and this accounts for the uncertainty and controversy which have so long existed regarding this complaint.

With respect to a primary affection of the hair occurring spontaneously, and not preceded by any general symptoms of morbid action in the system, I must have my doubts. I made many inquiries of the medical men with whom I associated, and I could never find any one who had seen the plica as an original affection commencing in the hair itself. I see no reason, however, to deny the possibility of such an occurrence. I shall not speak of the means employed to cure this affection: my sole object has been to endeavour to explain the causes of so much contradiction in the evidence stated regarding the nature of this singular complaint.

September 1834.

M. BRESCHET'S OPERATION FOR THE RADICAL CURE OF VARICOCELE.

To the Editor of the Medical Gazette.

Sir,

It has hitherto been confessed, that, amongst the affections for which surgery possesses no radical cure, varicocele holds a foremost place: for in the present improved, and, if I may so speak, refined state of surgical practice, it would be needless to combat the various proposals of castration, excision of the dilated vessels, &c. &c.; their ephemeral reputation sufficiently proves their inexpedience. Nor can I view with much confidence the plan adopted by M. Amussat—viz. ligature of the spermatic and scrotal arteries; although that mode of treatment be said, in at least one instance on record, to have been attended with a favourable result.

The honour of increasing the domain of curative surgery, by a radical treatment of varicocele, appears to have been reserved for M. Breschet. This distinguished surgeon has, in fact, devised a plan, simple as it is ingenious, by which the most inveterate scrotal and spermatic varices are completely and expeditiously removeable. I shall proceed to lay before your readers a brief account of this plan, accompanied with a case in which it was employed. I make choice of the first case in which M. Breschet operated, in order that the attendant difficulties of a first trial may not be concealed, and, at the same time, that the timid may not imagine them greater than they really were.

The patient was a servant, æt. 29, robust, and of strong constitution, who, so early as the age of 15, had perceived a difference in the conformation of the testicles. Some years afterwards, a tumor and varicose dilatation of the left scrotal veins became evident. The patient was frequently obliged to give up his ordinary work. He was admitted into the Hôtel Dieu, May 27, 1833.

The diagnosis of the affection was easily established; the usual symptoms of spermatic and scrotal varicocele existed in a very marked manner. Many of the dilated veins of the scrotum equalled in size the auricular finger; and a fasciculus of vessels, united so as to form

a considerable mass, originated at the cauda of the epididymis, from which point they followed the course of the cord to the external abdominal ring. The vas deferens was recognized by the characters which are peculiar to it.

The usual palliative treatment was prescribed, and its use continued during a month. The veins of the cord and scrotum, during that period, became slightly diminished in size, but the increase of volume which followed the erect position clearly indicated that the treatment had been, indeed, but palliative. Pressingly urged by the patient, M. Breschet thought of putting into execution a mode of treatment for a radical cure, the idea of which he had previously conceived. The principle upon which it was based was the obliteration of the affected vein *by compression*. The compression was at first produced by small iron pincers, the pressure of which was always equal, and resulted from the simple elasticity of the branches of the instrument. But the difficulty of using these pincers, their occasionally too great pressure, and the impossibility of padding their metallic surfaces, induced M. Breschet to use in their stead others so formed as to permit the part destined to come in contact with the scrotum to be covered with soft linen, or leather, and the pressure to be graduated at will, by means of screws.

The instruments were at first applied on the veins of the scrotum, at the extremity of two of the most voluminous of them; care being taken to leave no considerable anastomosis between the two points compressed. Their presence determined slight local pain, and the trifling inflammation which followed was combatted by emollients, resolutives, and repose. On a second application, the pain was much less considerable; the graduated compression caused a thinning of the skin, and, bringing the two opposed portions of that membrane into contact, produced a dry eschar, solid, thin, and transparent, resembling parchment. Its detachment was followed by an ulceration of much less extent, and less painful, than in the former instance. These ulcers were perfectly cicatrized in a few days; they produced no hæmorrhage. The vein remained full of clotted blood; this blood was gradually absorbed; no inflammation took place; and subsequently all traces of the existence of the vessel had disappeared. The different veins of the scrotum were successively treated in the same manner.

This success was, however, incomplete. The spermatic veins still remained. The application of the instrument to them was not so easily effected. They were surrounded by a thick skin containing fat, and the vas deferens was in their immediate vicinity. The small size of the nerves and arteries prevented their being drawn aside. The accidents to be apprehended were pain, violent inflammation, formation of a deep eschar, and denudation of the cord. For this new application the instruments were modified, so as to offer a larger surface to the part affected, and to present a curve which should prevent the pressure of the fold of the skin. The vas deferens was excluded. The pain on the application was considerable, but removed by local means. The instruments were kept on seven days; one placed as near as possible to the external ring, the other towards the inferior part of the cord. They determined an inflammatory swelling of the parts comprised between the two pincers, and produced a superficial eschar of the part on which they immediately acted, combined with an adhesion of the two opposed cutaneous surfaces. The consequent ulcerations were cicatrized in less than fifteen days; before which time the cord had lost its knotty feel. There, however, still existed, at the cauda of the epididymis, a mass of vessels extending as far as the place of the last compression. Two other pincers were applied; one immediately before the testis, which was drawn backwards, the other two inches higher up. They were kept on the same number of days as the preceding, and followed by some pain, inflammatory swelling, and eschars of the integuments.

It deserves remark, that the inflammatory symptoms, after this last operation, were more violent than before, and less promptly removed. The instrument placed above the testicle produced a perforation of the skin, and a solution of continuity resembling that produced by a seton. The inflammation and swelling were considerable; an abundant oozing of a sero-purulent matter existed during fifteen days, from the ulcer. These accidents were got under by

emollient cataplasms and repose, and at the same time the varicose mass which had existed at the bottom of the scrotum was converted into a small tumor, in which no trace of vessels was discoverable. The disappearance of the swelling soon permitted an examination of the testicle, which had been long lost amid the vast fasciculi of vessels. Its nutrition was found to be unimpaired, and its volume equal to that of the opposite side. The cure was perfect at the end of November.

The length of time occupied in the cure of this case, is by no means to be attributed to the method employed in its attainment, but to the various difficulties encountered in devising and having made the instruments employed, and to the caution necessary in the first trial of an operation of which the ultimate results could not, *à priori*, be fixed with any degree of certainty. M. Breschet has since operated in numerous cases, both in public and private practice, with perfect success, and obtained in a much less time. I have myself seen two cases treated by him at the Hôtel Dieu, in which the cure was perfect in from four to five weeks.

It is exceedingly important that the compression be more than sufficient to induce an adhesive inflammation, with occasionally slight suppuration, of the coats of the veins; such an effect would not only be insufficient, but might be injurious, from the propagation of the inflammation along those coats, or from the purulent infection of the blood. The pressure should be forcible enough to destroy the life of the part, but in a gradual manner. The mortification is confined to the part immediately acted on.

I should have wished to subjoin a sketch of the instrument, but unfortunately could not procure one as a copy.

I have the honour to be, sir,

Very respectfully yours,

WALTER H. WALSHE.

November 26, 1834.

BIRTH OF A DOUBLE FŒTUS.

To the Editor of the Medical Gazette.

SIR,

I FORWARD to you a singular case of the birth of a double fœtus, which has lately occurred in my district, should you deem it worthy of notice in your excellent journal. I am aware that cases similar to the following are recorded by authors, but happily to be met with rarely in practice.—I remain, sir,

Your obedient servant,

S. W. KIDGELL.

Pangbourn, Berks,
December 3, 1834.

On the 23d of November last, the husband of a female pauper called on me with a request that I would immediately visit his wife, who had suffered many hours under violent labour pains, and was attended by a midwife. She resided at a small village about four miles distant. The woman was 38 years of age, well formed, the mother of seven children, and had always enjoyed the most perfect health. In my absence, my assistant, (Mr. Webb), visited the case, and when entering the house was informed by the midwife in attendance that the uterus had acted very powerfully during the night; that the membranes had ruptured some hours; and that the delivery was interrupted by some unusual presentation. On examination, the os uteri was found to be fully dilated, the womb contracting very forcibly, and almost alarmingly. The head of one fœtus had partially protruded naturally, and the arm of a second was discovered to have presented. Notwithstanding the protrusion of the head, and the very forcible contractions of the uterus, for some time no progress was made; therefore the hand was gradually, but with difficulty, introduced into the vagina, with a view of ascertaining the impediment to delivery, when it appeared that some monstrous formation had taken place. By gentle and gradual traction, however, the breech and lower extremities were brought down, speedily after which, without manual interference, the second fœtus was expelled, connected to its twin by an inseparable union from the lower margin of the sternum to the pubes. They were females; still born; of full size and weight. Their heads were of ordinary shape; presenting nothing remarkable, except their entire resemblance to each other; and their extremities were perfectly formed. The funis and placenta were single in every respect; the former not of unusual thickness, and about twenty inches in length, terminating in the umbilicus at the central and inferior part of their junction.

I should have felt more satisfied had I been permitted to have inspected their viscera, whereby my case would have been rendered more complete, but to that measure, I regret to say, the parents decidedly objected.

A slight degree of hæmorrhage followed the expulsion of the placenta, which was checked without difficulty; no untoward symptom followed, and the poor woman is now fast recovering.

THE PRESENT *CRISIS* WITH REFERENCE TO MEDICAL REFORM.

To the Editor of the Medical Gazette.

Sir,

Allow me again, though after a long silence, to address you on Medical Reform; the passing day is, it seems to me, of great interest. The recent transactions at Brighton are not interesting to nations only, or to statesmen; their operation on the macrocosm of European politics will doubtless be pregnant with mighty consequences, begetting feelings and impulses in quarters and directions in which soeiety has been either sluggish, or too slowly advancing, in this and other countries. But in the little world of medical politics their influence will likewise be felt, and will be, as I trust, efficiently, though indirectly, operative, through the whole frame and constitution of our profession.

What was the position of the legalized medical authorities before the dismissal of the Whigs? This; that by inquiries entered into by a Parliamentary Committee, granted contrary to their wishes, and animated, they feared, by a spirit hostile to their vested interests, and to a considerable extent by the evidence of their own members, and even partisans, they have been proved incapable of adequately protecting the public or the profession; the former from ignorance or imposture, the latter from unlicensed competition; so that their diplomas or licenses are, practically speaking, proof unequivocal of little more than the expenditure of certain sums of time and money in the purchase of titular or parchment honours and privileges; and that, consequently, extensive organic and other changes, demanded by the spirit of the times and the wants of society, and hitherto denied to be just or necessary, and obstinately refused by the institutions complained of, were at length about to be undertaken by the paramount authority of parliament. The occurrence, therefore, so much dreaded, and so often and earnestly deprecated, viz. that of a reform *ab extra*, appeared impending, and awaiting only the lapse of a few months for its completion; and the decayed or defective institutions lay humiliated and discouraged, unwilling to accept, yet powerless to prevent, the expected innovations.

But now that the reform coach, to use H. B.'s phrase, is in good earnest in danger of an upset, and drivers and guards, and probably passengers also, all about to be spilt together, and the Whigs out of place, and parliament apparently (see Spectator, November 29th) on the eve of dissolution, what is the position of the medical governing bodies? Why, assuming a dissolution, it is, I should say, greatly altered for the better; for the dissolution will, legally speaking, convert Mr. Warburton's documents, one and all, into so much waste paper, value at most twopence per pound; and the Colleges will be re-established *in statu quo ante bellum*, precisely as before the war of witnesses, commenced and conducted with such signal perseverance, and, as I believe, purely public-spirited views, by the hon. member for Bridport. And with all the power of reform they ever had, they now have weighty reasons, not before so correctly estimated, for no longer subjecting themselves to the charge of a denial of justice, or of a bigoted attachment to withered and sapless distinctions; and are, I speak of the members individually, animated more thoroughly at the present moment than at any former period, with a disposition to meet all reasonable demands, and remove all proved abuses.

Thus Mr. Warburton's inquiries, however insignificant in a parliamentary sense after a dissolution, will yet not have been without important, and even precious fruits. Not only have they tended to soften the opposition to innovation on the part of the parties in possession of place and privilege, by proving incontrovertibly that defects and grievances do exist, sufficient to justify to some extent dis-

satisfaction and complaint, but they have, I conceive, likewise beneficially operated in another way, viz. by diminishing the bitterness of crimination and assault on the part of the excluded, by relieving them from the charge of groundless and petulant discontent, and releasing them from all anxiety as to the ultimate result, by unequivocally enlisting in the cause of medical reform the love of justice and sound sense of the general public; so that Mr. Warburton's labours have, in point of fact, greatly narrowed the debateable tract, by defining it; have lowered the temperature of feeling of the combatants; and brought each more nearly to that calmer tone and temper which is an indispensable preliminary to an amicable settlement of disputed claims.

Now assuming the neutralization of Mr. Warburton's labours, at least in a legal sense, by a dissolution, and assuming that the evidence procured by that able gentleman would have enabled him to make out an irresistible case for reform, let us inquire what is the policy pointed out, alike by good sense and good feeling, to the Colleges of Medicine of Pall-Mall East, Lincoln's-Inn-Fields, and Blackfriars. It is plainly, I think, this—viz. to make, as soon as may be, all reasonable *concessions* to their respective subject bodies; to make both eligibility and the elective franchise more nearly, if not wholly, coextensive with membership; to abridge or abolish all privileges hitherto attaching, directly or indirectly, to accidents of birth, education, opinion, &c. &c.; to abandon the practice of stigmatizing, in any way, particular branches of the healing art, even the least of whose subdivisions is respectable if practised by men of character; to raise the standard of education, not, however, by multiplying certificates, which, whatever else they prove, are quite incapable of proving the main point—viz. the application of the student's mind to his appropriate studies, and the attainment of the requisite amount of real knowledge and available acquaintance with disease, its signs, causes, and remedies; but by strict examination, catechetical and practical, of the aspirant to professional honours and emoluments. The adoption of measures founded on the views and principles just glanced at, is plainly, I think, the policy most becoming the wisdom and patriotism of the Colleges and now that they have had their cards, as I suppose, restored to them, and an opportunity afforded of retrieving past errors, and of recovering alienated attachment and winning golden opinions, I am sanguine in my expectations that the sound judgment and kindly feeling which, as I know, characterize many leading members of each College, will not fail to shew themselves, and that their possessors will not neglect to avail themselves of the sunny hour, and by timous and graceful concessions do honour to themselves, and to the state some service.

The "Gazette" is supposed, and I believe with good reason, to possess much more influence with the medical authorities than any of its contemporaries; and I beg leave to propose to the Editor the query whether he might not materially advance the good cause, by devoting a few of his eloquent leaders to the subject of *spontaneous* reform. To his superior literary ability, and ample means of elucidation, I would gladly consign the task of stimulating zeal, guiding inquiry, pointing out the best means, and generally aiding those in office and authority in their endeavours to enlarge the basis and consolidate the disunited masses of the professional edifice. Now that for the second time they seem to have the game in their own hands, I cannot believe that the many eminent and influential gentlemen who declared before the Committee that reform was, to a considerable extent, safe, just, and desirable, will go back from their own statements, and, by allowing the present opportunity of *spontaneous amendment* to pass by, expose the dignified bodies to which they belong to another such badgering as they lately experienced. Justice, self-love, published professions, all conspire in calling on them for exertion. Difficulties there are none of importance, saving such as always beset indolence and timidity, however favourable the occasion or righteous the cause. The sluggard's cry and the coward's ever is, "There is a lion in the way."

Your obedient servant,

Civis Medicus.

London, December 1, 1834.

ANALYSES AND NOTICES OF BOOKS.

" L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

Outlines of a New System of Philosophy; being a View of the System of Sciential Medicine, or Medicine (and all Human Knowledge) as proveable as Geometry. By THOMAS EDEN, Member of the Royal College of Surgeons.

WE have all heard of the sailor, who, being mightily pleased with the panorama of Captain Ross's expedition, said to his neighbour, " You call it *beautiful*, do you? I call it *philosophy*, by G—!" Mr. Eden puts us in mind of that sailor; he calls his book " philosophy," but we fear with not half so good reason as the honest tar did the picture. As a specimen of the *philosophical* spirit in which our author writes, we extract the following:—

" It is the blind, fantastical, ignorant, and idiotic cant of the age, that diffidence and modesty are the inseparable attendants on, the characteristics of, true wisdom; that 'a little learning is a dangerous thing;' that 'shallow draughts' of truth 'intoxicate the brain;' 'drink deep or taste not,' are the first precepts of teachers, the great lesson of the moralists, the measured tattle of the poets, and the revered doctrines of all those who never 'tasted' a 'shallow draught' of real learning—who do not know what wisdom is, who never drank the living waters of the well of truth. The inculcation of such doctrines, together with the precept that 'it is your duty to bow respectfully to all those who have obtained the respect of others,' is the curse which every father throws upon his children—the well-adapted contrivance by which every pupil is kept a *bigger fool* than his teacher; it teaches diffidence—takes away all manly dependence on self—deprives, at once, the whole human race of all individuality, making every man a drivelling non-entity; the evasive 'we' I so constantly meet with, leaving to mankind no one *advancer;* not a single defender of the truth; but making every child of Adam a time-serving worshipper of any many-headed fool that looks frightful.....The concoction and the diffusion of these doctrines are the crafty *doings of the devil*—the master-work of Satan, by which he, under the semblance of the amiable, cozens man to abandon reason—to forsake the guide which his Creator gave him when he withdrew himself."

But the reader may ask, what is all this *system* about? and what is *sciential* medicine? We can only answer, that the latter appears to be an epithet of the author's invention, to distinguish *his* medicine from all other kinds—those being " acephalous," or " born without brains," which are not *sciential*. Let us hear himself:—

" When searching for a difference more *audible* than between 'sciential' and 'scientific,' the total inability of your science to reason, to decide, or to prove, offers me, and justifies my taking, the word 'acephalous.' That science of medicine, then, which is now resident in the heads of the heads of the profession, I (in contra-distinction to 'sciential') call 'acephalous medicine,' for it has no reason, it has no brains in it."

As to the *system*, we must candidly confess it is too deep for us and our powers of penetration. We have spent some time upon it, endeavouring to catch a glimpse of scientific meaning any where about it, but have utterly failed. We were certainly fools for our pains: why did we not stop short when we came to the following *definition?*

" A science, or a portion of knowledge, or a truth, of the individual, or of the few, or of the many, or of the multitude, is of, or belonging to, science, knowledge, truth."

We print the sentence (?) *literatim et punctatim*, as it is in the original; and we apprize the reader that beauties of the same sort may be found *passim* throughout the volume.

By the way, we observe a note, in which it is said—

" If any professor who wishes his authority to be put against sciential medicine, will send his name to me, I will be answerable that the public have the benefit of it; but, N.B. he must pay the postage, for there is no man in medicine whose mere authority is worth twopence."

Now we have as little inclination to squander twopence in this matter as Mr. Eden, still less to take the trouble of sending him our name; but we beg, at the same time, in the most unqualified

manner, to protest against his "*sciential* medicine," and to describe his book as one of the most stupid, impertinent, and grossly ill-written productions, that we ever remember to have fallen into our hands.

Traité d'Anatomie Descriptive, rédigé d'après l'ordre adopté a la Faculté de Paris. Par HIPPOLYTE CLOQUET. *Edition Belge, augmentée de Notes, extraites des ouvrages de Soemmering, Meckel, &c.; d'un Traité des Preparations Anatomiques; et de l'Anatomie des Regions, d'après Blandin. Avec un Atlas de* 15 *Planches in folio.* Dulau.

THIS work is now completed, and forms a handsome octavo volume, accompanied by fifteen plates, in which all the chief objects in anatomy are well represented. Space is admirably economised throughout; and when we consider the additions made to the original, which are both select and valuable, the atlas included, we cannot help recommending this as the best, at the same time that it is by far the cheapest, text-book for anatomical students who are familiar with the French language.

MEDICAL GAZETTE.

Saturday, December 13, 1834.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

PRESENT POLICY OF THE COLLEGES.

WHAT OUGHT IT TO BE?

AN interesting and important question just now arises, regarding the actual state and prospects of medical reform. In the event of a dissolution of parliament, which, we suppose we may say, is now certain, abundant scope is given for speculations of all sorts, relative to the effect of that occurrence on what has already been done, and on the probable fate of this among other objects of reform to be agitated under the auspices of the new ministry. The evidence, notwithstanding its "hair-breadth 'scape" from flood and fire, by the instrumentality of Mr. Dermott—who, by the way, ought to have been presented ere this with some civic memorial for his invaluable services—and notwithstanding the precious attentions and fostering care bestowed upon it by certain needy speculators, who think it worthy of being committed to posterity in the shape of sixpenny pamphlets—may still go the way of all waste paper. This intelligence, we dare say, will be very afflicting to some parties; but we, who have all along contemplated the matter dispassionately, have no great regrets about it. It seemed to us that Mr. Warburton—the only member who could be got to take any trouble in the affair—gave himself a great deal of unnecessary labour, for no earthly purpose that we could understand, except to afford to all who chose to avail themselves of it, the opportunity of grumbling *ad libitum*, and of acquainting the nation with what they conceived to be the proper objects of reform. Months after months have thus been wasted—the public money squandered—and in the end a mass of manuscript and printed documents collected, which it would require the best efforts of some "heaven-born minister," in addition to the honourable member for Bridport, to digest, and reduce to a manageable compass. There was much valuable material among it, we admit; but it was wofully disfigured and obscured by the superfluity of trash with which it was encumbered: the weeds choked up the flowers—the tares encroached upon the more wholesome grain. One thing, however, has been certainly gained by the transaction—the feeling of the necessity for a *movement* has been inculcated: to stand or sit still, as the corporations have hitherto done, even in spite of the better judgment of their individual members, is now no longer possible; the

impetus has been given, and "*marche! marche!*" sounded in their ears, in a tone scarcely to be disobeyed.

But let what will be the next proceeding on the part of the legislature, an interval of delay must take place, in which to be idle, on the part of the Colleges, were highly criminal. That interval may be turned to the best account. It is a season in which much that ought to be done may be done with no mean grace; and in which much that ought not to be done may be effectually prevented. But our valued correspondent Civis Medicus has, we perceive, anticipated us on this head. Bold as the measures were which were advocated by him not very long since, and energetically as he would have them put in execution, he can clearly see in the present turn of affairs the opportunity which offers itself for effecting changes far more temperate and beneficial—for making far more "graceful concessions"—than could have been well proposed under the late arrangements. For the nature of those changes and concessions, we would refer the reader to the letter of our correspondent, in a preceding page.

The friends of misrule—the advocates of destructive alterations in the things that be—will no doubt lift their voices on seeing any preparations for "setting houses in order"—for adopting, in fact, the very measures which they themselves pretend to desire. But the babble of the factious should only provoke contempt. We trust that no clamour from such a quarter will have any influence in retarding the work that should immediately be begun. There is at present no compulsion—no force operating from without, save that of public opinion; and in yielding to that, which, by the way, is very far short of the opinion of the violent few, there need be no sacrifice of honourable principle, nor of grade. It is never too late to take up the practice of what is right, and those who resolve to fall into the proper path, may safely do so without risking any character except that of consistency, or rather of obstinacy, *in error*. Reform, besides, is the order, the fashionable virtue, of the day; from the peer—nay, the premier—to the peasant, in some shape or other, it is the test or the watchword of patriotism. It would be a strange anomaly indeed, if, in such a state of things, a couple of chartered bodies, hitherto held in honour, as the source of much distinction in the profession—with the means, too, of ample and efficacious change for the better within their grasp—should alone sit still in the general movement. Will it be wonderful, if such should unfortunately be the case, that neither regard nor consideration should attach to parties conducting themselves so indolently, —if not vexatiously?—that when the time comes (as come it must) for material alterations in those bodies, suited to the circumstances of the period, no respect will be paid to the suggestions of the parties, but that they will be met with that cold scorn which they will have so richly merited?

ALL PRIME MINISTERS "ONE FACULTY" MEN.

When Lord Grey was prime minister, the Editor of the Lancet told us that he was the fittest statesman in the world to carry through the great cause of medical reform. So fully was our contemporary convinced of this, that he was indignant at any surmise of the contrary; oracularly observing, "not one word of caution from the press is required by Earl Grey."

When Lord Melbourne succeeded, we were informed that the profession "had reason to rejoice," because he was even more fit than the noble Earl who preceded him, and "displayed *exalted*

firmness in prosecuting an inquiry into medical abuses."

The Duke of Wellington was next called to his councils by the Sovereign; and when it was supposed that *he* would be prime minister, we were assured that he was one "the excellence of whose tactics in civil government have been as generally admitted as has been the brilliancy of his genius in war;" that some hold him to be "more than a moderate amender of acknowledged abuses;" and, in short, that "there is no ground for believing that the Duke of Wellington will be less desirous of removing medical abuses than was the noble Viscount."

But now Sir Robert Peel is premier; and this, too, has been provided for. "Where?" asks our consistent and honest contemporary, "where was the honourable Baronet when the motion of Mr. Warburton was brought forward? He was present, assented to the proposition, and was immediately appointed a member of the medical committee; and of that committee the honourable Baronet is still a member." True—very true; but then there is one little circumstance omitted in the narrative; namely, that Sir Robert went to the committee some days after the sittings had commenced; that he objected to the manner in which they were conducted; that his views not being acceded to, he left the room, *and never entered it again*—a most potent indication, certainly, of his favour for the "one faculty" system.

Thus we have the satisfaction of knowing that, as regards medical reform, we are in a most satisfactory state: Lord Grey was good—Lord Melbourne better—the Duke of Wellington best—and Sir Robert Peel is "*most* best"—a very radical in medical politics. There is more in all this than is dreamt of in your philosophy, if we could but find it out; but till the true cause be discovered, and till Wakley's surreptitious edition of the parliamentary evidence cease to fall still born from the press, we advise him at once boldly to adopt for its motto—

"And oh! in Downing-Street should Old Nick revel
England's prime minister—then bless the d—l."

ANATOMY ACT—INTERFERENCE WITH VESTRIES.

One of the greatest difficulties in the way of any satisfactory plan for the distribution of subjects for dissection, is the jealousy with which the teachers look upon each other. Thus, whatever seems likely to benefit one is opposed by another on this very ground; and we have heard of instances in which threats have been held out, *by medical men*, of pasting placards in the vicinity of workhouses, for the purpose of creating a tumult among the poor, rather than suffer a rival to gain his point. Until the parties concerned can come to a better understanding, and cease in their efforts merely to oppose each other, it is vain to hope for any change capable of affording general satisfaction.

Of the public displays of professions and acts apparently irreconcilable to each other, we must say that by Professor Quain is the most striking. This gentleman has written two long letters against the interference of the schools with the Boards of particular parishes in which they may have interest; and yet, in the second epistle, containing what he himself calls an "essay upon exertion," he (probably through inadvertency) admits that a recent and successful "exertion" has been made by himself to retain exclusive possession of St. Andrew's. The bodies from the parish in question have hitherto been exclusively given to the London *University*. We knew that an attempt had been made very lately to have other schools admitted to a share in the distri-

bution, and we thought that this application had succeeded, and that Dr. Quain, however reluctantly, was nevertheless a *bonâ fide* practical supporter of the non-intervention system. But in this we were mistaken; for we have since learnt that he not only opposed, but opposed with success, the appropriation of bodies from the parish of St. Andrew's to any school except that of Gower-Street. He speaks very bitterly of the attempt to effect a distribution, and then adds—"we were not, however, the persons to be tripped up so readily, even though taken unawares—we bestirred ourselves accordingly;" and then he emphatically adds, that the vote in his favour "remains undisturbed." Thus it would appear, that while he writes in the Lancet against teachers interfering with the parish authorities, so as to prevent a general distribution of the bodies, his practical comment on the doctrine is so to "bestir" himself as to induce the parties in question to stultify his own principle. We would not willingly do Dr. Quain an injustice, but we cannot see any other light than the preceding in which, upon the shewing of his own letters, this manifest inconsistency can be viewed.

We cannot, however, exactly understand why individual lecturers should be so anxious to obtain, and others to prevent them from obtaining, the supply from particular parishes, because, according to the present arrangement, it does not appear that they receive such bodies *in addition* to their share in the general distribution. The advantage must therefore be very trifling, unless any of the teachers so circumstanced neglect to make the proper returns, and thus appear to have had fewer bodies than is really the case. But this would be attended with such a heavy penalty, if discovered, while to avoid discovery would be so difficult, that (even setting aside all restraint from feelings of honour), we can scarcely take it into our estimate as a possible contingency. Finding that the returns of the Inspector were open to examination, we have availed ourselves of the opportunity afforded us, and perceive that the numbers in some of the principal schools, up to last Saturday, were as follow: — Bartholomew's, 20; Guy's, 18; Webb-Street, 18; University, 18. It does not, therefore, appear to us, that there is any evidence whatever of Dr. Somerville having shewn a preference for any particular school*.

SUPERIORITY OF SMALL HOSPITALS.

To the Editor of the Medical Gazette.

Sir,

Although I had been told that the learned Professor of Physic, at the London University, had, by the aid of "the schoolmaster," arrived at the conclusion (since his resignation of St. Thomas's Hospital, where there are but 500 patients) that it is only in a small hospital, containing from forty to eighty beds, that the student can hope to attain any real knowledge of his profession, and that he had, in fact, stated this to his class, in his introductory clinical lecture, still my mind was too obtuse at first to believe that the deduction necessarily followed from the premises. I learn, however, that his excellent and equally disinterested colleague, the Professor of Materia Medica, has arrived at a similar conclusion, which he also has taken occasion to manifest to his class. I feel, therefore, that I should be wanting in duty if I did not urge on you the propriety, nay, the necessity, of impressing on the public generally a fact so new and so important. As the London University Hospital has certainly the advantage of being the smallest of the small among the hospitals of this metropolis, so is it, of consequence, the best adapted for teaching the treatment of disease. In the firm hope and

* In our leading article upon this subject last week, p. 344, col. 2, line 35, for *not* read *but*: the erratum is important, as it affects the sense.

belief that quackery of every description will never cease to flourish in this world generally, and in this town in particular, I am, sir,

Your humble servant,

A Convert to Disinterested Opinion.

December 6, 1834.

[If our correspondent will turn to vol. ix. p. 98, of this journal, he will find that the learned professor last alluded to devotes three columns of our smallest type to the elucidation of an opposite doctrine. He then lectured at a *Dispensary*, and said, "I am most anxious, indeed, to clear from your minds, gentlemen, the prejudices which have been so assiduously attempted to be impressed upon the student, against the utility of Dispensary practice." And again: "If you suppose that the results which you witness in the Hospital are to follow the administration of the same medicines prescribed for similar disease in private practice, *you will soon find yourselves wofully mistaken!*" This may seem a riddle, when taken along with the more recent declaration in favour of any hospital small enough to afford a sufficiently limited field of observation; but the reading of it, nevertheless, lies in few words—the *Valetudinarium* was not then begun.—Ed. Gaz.]

PATHOLOGICAL LECTURES,

Delivered in King's College, London,

BY

Professor Mayo, F.R.S. &c.
Surgeon to the Middlesex Hospital.

VI.—*On Diseases of Joints.*

1. *Of the Diseases of Synarthroses.* — Joints are of two kinds. In one there is no discontinuity; the bones which enter into the joint are united by an intervening layer of fibro-cartilage, and the articulation is strengthened externally by ligamentous bands, which stretch from bone to bone across the uniting medium. Joints of this kind, or *synarthroses*, exist between the bodies of the vertebræ, and between the pelvic bones; their pathology will form the subject of the present observations.

It will be best to consider, *in limine*, the habitudes under disease of the separate tissues which concur in forming these joints. The tissues are three: bone, fibro-cartilage, ligament.

1st, The kind of bone, which enters into the composition of synarthroses, with a thin external crust, and a close and strong cancellous structure, has great vascularity and vitality.

a, It unites readily when broken.

b, It is liable to atrophy, in the two forms of rachitis and mollities ossium.

c, It is readily absorbed through pressure made by a growing tumor of the adjacent soft parts.

d, It is susceptible of inflammation. When inflamed, it rarely becomes more hard and solid, which is so frequent an occurrence in the cylindrical bones. It rarely becomes the seat of abscess. It frequently becomes softened, from absorption of its earthy matter, when it presents one of two appearances—either the internal periosteum highly vascular, and the cancelli filled with brownish gelatinous fluid — or with a less degree of vascularity, the cancelli filled with yellow curdy matter. Either of these states is eventually followed by caries, or ulceration; which ordinarily commences on a surface of the diseased bone, not in its interior, and is liable, but not likely, to be attended with partial necrosis.

2d, The fibro-cartilages in the synarthroses are generally not homogeneous; or there is every variety among them, from the sacro-iliac joint, in which the medium of union is nearly uniform, a layer of elastic substance, between cartilage and yellow ligament in structure,—and the pubic synchondrosis, where the exterior layers are more dense and fibrous than the central part,—to the fibro-cartilages between the bodies of the vertebræ, of which the exterior part, consisting of strong, white, silvery fibres, approaches to common ligament, while the interior part, a tissue *sui generis*, is of a soft and almost pulpy consistence, yet gliding, without any abruptness of transition, into the texture of the outer and ligament-like portion.

a, Fibro-cartilage, when torn, is susceptible of reparation. In fracture of a vertebra, the adjacent fibro-cartilage is generally ruptured; if the patient lives, it unites just as bone unites. The texture of the cartilage of a rib is perhaps too dissimilar to that of intervertebral substance, to be used in illustrating the properties of the latter; but I made some experiments upon the union of the costal cartilages, which I may take the present opportunity of mentioning. The cartilage of a rib was divided in several animals, which were killed at different periods afterwards. I found the initiatory stages of reparation which

had been set on foot to be exactly similar to those in bone. The cellular membrane surrounding the divided part was first consolidated into a firm capsule, which contained the cut ends of the cartilage. This consolidation was produced by the infiltration of lymph; an exudation of the same substance formed a medium of direct union between the ends of the divided cartilage. The reparatory capsule gradually became converted into a texture resembling cartilage. As, in the reparation of bone, the callus changes into cartilage, and then ossifies, subsequently to which direct union of the broken ends by bone takes place, so, in the restoration of a costal cartilage, the exterior thickening becomes cartilaginous, while the direct union of the divided ends is still by lymph alone. Mr. Stanley has two preparations of cartilages of the ribs in this stage of the process of union.

b, Fibro-cartilages are susceptible of absorption upon pressure being made upon them by the growth of tumors, but in a much less degree than bone. Accordingly, in the growth of an aneurism of the descending aorta, the intervertebral fibro-cartilages are found to be absorbed superficially only, while the bodies of the vertebræ between them are deeply excavated and eaten away.

c, The intervertebral fibro-cartilages probably participate in that weakness, or mode of atrophy, through which, in young persons, the vertebral column becomes laterally bent.

d, Fibro-cartilages generally, it may be presumed, are susceptible of inflammation. The only instance, however, in which I have found this demonstrable, occurred in the semilunar cartilages of a knee-joint. Ulceration of the cartilages covering the bones had taken place, with high inflammation of the adjacent surface of the bones, and of the capsular synovial membrane. The semilunar cartilages (the knee having been injected after amputation) were red with the vermilion, swollen, softer than natural, and when divided, shewed, upon the section, extremities of cut vessels.

e, Ulceration and suppuration may occur in fibro-cartilage. In a case communicated by Mr. Howship to Sir Benjamin Brodie, in which, upon dissection, no remains were found of the intervertebral cartilages between the tenth and eleventh dorsal vertebræ, nor between the third and fourth lumbar—these intervertebral spaces being filled with pus, and the opposite surfaces of the vertebræ being carious, but only to a small extent — the *central part* of the intervertebral cartilage, between the ninth and tenth dorsal vertebræ, had been completely absorbed, and pus was found in its place. Externally to this the concentric layers of elastic cartilage were entire, though somewhat altered from their natural appearance.

f, Portions of fibro-cartilage sometimes become detached in the progress of ulceration; they are then dead parts—irritants to the parts adjoining. It is conceivable that they may sometimes cease to be alive before their adhesion to the neighbouring living substance is destroyed.

3d, The affections of ligament will be more fully considered in the next lecture. It is sufficient to mention at present that the ligaments are readily repaired when torn; that they are susceptible of atrophy and elongation—of inflammation, softening, ulceration, sloughing.

The diseases of the vertebral column admit of being classed under two heads—atrophy, namely, and inflammation. To the first head belong weakness of the spine in young persons, the yielding and curvature in rachitis, and the softening in mollities ossium. Of the nature of these cases I have briefly spoken in a former lecture. Under the second head may be considered those instances which are usually classed together by the term spine disease. In introducing this principle of classification, however, I am bound to state that there is not evidence enough to authorize me in asserting, as a thing proved, that all cases of spine disease are produced by inflammation, although I strongly anticipate that this will be found to be the fact. Sir Benjamin Brodie, who has contributed in so great a degree to the elucidation of the diseases of joints, does not appear to admit this view of the subject. After drawing an important distinction, which originated, I believe, with him, between cases where the vertebræ are first affected, and cases in which the intervertebral substance is the part primarily diseased, he notices, *as a third division*, "another order of cases, but of more rare occurrence, in which the bodies of the vertebræ are affected with chronic inflammation, of which ulceration of the intervertebral cartilages is the consequence." My own impression is, that all these affections begin with inflammatory action; sometimes affecting a single bone; sometimes two or more adjacent bones; sometimes the whole extent of the vertebral bones; sometimes affecting the fibro-cartilages alone; sometimes attacking both systems at once:—but in every case leading eventually to ulcerative disease of both, that affords evidence by the greater ravage it has committed of one or other tissue, as to which was primarily affected.

The two following cases exemplify commencing inflammatory disease of the vertebral column:—

A young lady, when wheeling a heavy garden-chair, was conscious of having strained her back, but the sensation went off. In a few days, however, she found that the least exercise brought on pain in the lumbar portion of the spine. This was followed by pains in the left thigh and leg, which subsequently extended to the right. Two months after the complaint began, I saw this patient: there was no irregularity of the spinous processes of the lumbar vertebræ, or tenderness on pressing the adjacent region; pain only, and a sense of weakness, were present. By perfect quietude, and preserving the horizontal posture almost constantly, joined with the use of caustic issues applied over the seat of pain in the loins, this patient, in a year, was entirely restored.

A young woman was admitted an inpatient of the Middlesex Hospital, with the following symptoms. She suffered constant pain in the whole length of the vertebral column, which, when lightly struck, communicated a sensation of soreness through the bones. There was no projection of the spinous processes at any point: her right side, and right arm and leg, were deficient in sensibility, and were weaker than the left. There was some incontinence of urine. She was kept in the recumbent posture, was cupped on the most tender parts of the spine, and had issues made with the moxa: calomel was likewise given to touch the mouth. By a long pursuance of this treatment she eventually recovered.

I cannot better exemplify the conditions into which the vertebral column falls under spinal disease, than by extracting from Sir Benjamin Brodie's work, on the Diseases of Joints, the following account of three dissections:—

On examining the body of a young man, "no remains were found of the intervertebral cartilage between the fourth and fifth dorsal vertebræ, and the opposite surfaces of these two bones were consumed by caries to some extent, but more upon the left side than upon the right. The intervertebral cartilage between the eleventh and twelfth dorsal vertebræ had also entirely disappeared, and the opposite surfaces of these bones were in a state of caries; but this had not extended itself sufficiently to occasion any sensible loss of bony substance. The intervertebral cartilages between the third and fourth, fifth and sixth, seventh and eighth, tenth and eleventh, dorsal vertebræ, and also that between the twelfth dorsal and first lumbar vertebræ, were all found in a perfectly natural state towards the circumference, but in the centre they were of a dark colour; and on the surfaces, towards the bones, they, as well as the bones themselves, were in a state of incipient ulceration, but without any appearance of pus having been secreted. All the other intervertebral cartilages were in a natural state, and the bones of the vertebræ every where had their natural texture and hardness. On laying open the theca vertebralis, the membranes of the spinal marrow were found adhering together, behind the space between the fourth and fifth dorsal vertebræ."

"On examining the body of a young woman, ætat. 19, the bodies of the three or four inferior lumbar vertebræ were found preternaturally vascular, and of a dark and almost black colour; but they retained their natural texture and hardness. The intervertebral cartilages were in a natural state, but the body of one of the vertebræ was superficially ulcerated, for about the extent of a sixpence, on one side, towards the posterior part. A large abscess communicated with this ulceration, and occupied the situation of the psoas muscle of the left side, extending downwards to the groin."

"On examining the body of a man, ætat. 45, the cancellous structure of all the dorsal and lumbar vertebræ was found of a dark red colour, and softer than natural, so that they might be cut with a common scalpel, or even crushed by the pressure of the thumb and fingers. The opposite surfaces of the bodies of the second and third lumbar vertebræ, and of the cartilage between them, at the posterior part, were extensively destroyed by ulceration. Anteriorly, the bones and the intervertebral cartilages were entire, and the latter was in a perfectly natural state; but the bones throughout were of a dark and almost black colour."

The features of spinal disease are obvious and necessary consequences of the morbid changes which have been described.

The vertebral column, attacked with inflammation of the bones or fibro-cartilages, becomes the seat of sensations of weakness, pain, and tenderness.

The bony or cartilaginous substance of the vertebral column, being absorbed in front, causes the spine to bend forwards, and the undiseased bony arches to project backwards.

The vertebral column, being weakened by absorption of one or other of its constituents, is liable, on any sudden violence, to give way suddenly, and so to become suddenly bent at the ulcerated part. In the majority of instances, the curvature takes place very gradually.

The spinal marrow, being either compressed by the flexure of the vertebral column, or irritated by contiguous sympathy, diminution of sense and motion of the lower part of the frame, with

spasms, and pains of the legs, and incontinence of urine, and constipation of the bowels, are liable to follow.

Finally, as another consequence of contiguous sympathy, there are liable to occur in the adjacent cellular tissue extensive formations of matter, which point either in the loins or at the groin, under the names of lumbar or psoas abscess.

It is found by experience that lumbar and psoas abscesses rarely occur except in connexion with disease of the vertebræ. To this connexion of disease the attention of the surgeon is at once directed, whenever matter is found to point in the lumbar region or the groin. When such an abscess has taken place, it commonly marks an advanged stage of spine disease; but it is sometimes possible, even at this period, by appropriate remedies, to relieve at the same time the disease of the vertebral column and the abscess which it has occasioned.

Disease of the pelvic joints is of very unfrequent occurrence. At the time of labour, an affection occasionally takes place in these joints, which is sometimes distinctly inflammatory, while at other times it bears the character of simple absorption of the fibro-cartilage. I witnessed an instance in which, after labour, an abscess formed behind the symphysis pubis, which was followed by a sense of weakness and giving of the pubic joint, which lasted several weeks, but gradually went away. Cases of this description are, I believe, far from uncommon. In others, the sacro-iliac joints are principally affected; there is no suppuration, but extreme weakness at these joints, which lasts many months. The patient is obliged for a long period to keep the recumbent posture; and then, and afterwards while recovering strength, derives remarkable comfort, and a sense of support, from bandages round the pelvis.

The following case, which was under my care, exemplifies commencing disease in the sacro-iliac synchondrosis, brought on by external violence.

A gentleman was riding in Hyde Park, when his horse reared, and fell backwards, bearing him to the ground. He was lifted by those around, when he found himself capable of walking, with assistance. I saw him a short time after the accident. The only part bruised was the integument covering the back of the sacrum, and more to the right side than the left. There was no fracture that I could ascertain—nothing but the bruise; and, as it afterwards appeared, a strain of the right sacro-iliac joint. The patient could bear the ilium to be pressed in any direction, and could, as I have mentioned, both stand and walk. In the evening considerable pain came on; he was cupped upon the hip, and experienced relief. The following day the cupping was repeated. After a month, during which this patient had kept his room, and the pain had nearly left him, he went, for change of air, to Richmond, when a child accidentally touching his foot, as he lay on a sofa, he drew up the limb suddenly. Upon this he experienced a sensation which he described to be like displacement of the bones at the right sacro-iliac joint; and he fancied he recollected that at the time of the accident he had felt a similar sensation: but certainly neither then, nor at this time, did pressure upon the ilium, in a direction to strain the sacro-iliac joint, bring on this sensation, or cause any thing like sensible motion of the joint. The pain now became gradually very severe, and extended down the limb, in the course of the sciatic nerve.

It was a year and a half from the occurrence of the accident before this patient had recovered. In this period many remedies were tried: those which were most beneficial were, strict observance of rest, and the application of caustic issues over the joint. When by these means the pain had been entirely subdued, cold sea-bathing rapidly restored his strength.

PRIZES FOR BOTANY,

PROPOSED AND ADJUDGED BY THE SOCIETY OF APOTHECARIES. 1834.

[An appeal has been made to us relative to the late decision of the botanical prizes; and from what has been stated to us, on very respectable authority, some of the unsuccessful candidates have reason to complain. The examination, it seems, is twofold—written and oral. The gentleman who obtained the first prize, it is admitted, was the best answerer in writing; but not to such a degree as to counterbalance his very inferior oral answering. It is suggested that more weight should have been attached to the latter ordeal—which is, in fact, the practical, and perhaps the more valuable part of the examination—it being quite possible to be made up for the other part by mere book knowledge. We will not enter into a detail of the particular merits of the answering: but some of our readers may perhaps be glad to see the list of questions proposed to the candidates on the occasion.—Ed. Gaz.]

Questions for Written Answers.

1. What are the more ordinary forms assumed by vegetable tissue?

2. Are the various modifications of this tissue separated by well-defined limits, or are they found to pass into each other?

3. What is the structure of the cuticle, and of what nature are those bodies called stomata which appear upon its surface?

4. Are you acquainted with any organs destitute of cuticle?

5. Do the ascending and descending axes of a plant differ anatomically?

6. Of what is the medullary sheath composed?

7. What are meant by medullary rays?

8. Is the presence of buds essential to the generation of wood?

9. Are the cellulares wholly destitute of spinal vessels and tubes?

10. What are the essential functions of a leaf?

11. In what respect do the leaves of the cellulares differ from those of the more perfect plants?

12. On what grounds is the theory which derives the various parts of a flower from the leaves to be supported?

13. What are the effects produced by etiolation?

14. What is a bulb?

15. What is the nature of the tuber in the potato, and how is it distinguished from a rhyzoma?

16. On what do the various forms of leaves depend?

17. Do petals differ anatomically from leaves?

18. What is the nature of that kind of inflorescence called a spike, and what would it become if its axis were depressed?

19. What is the nature of a cyme; and if its general axis were elongated, what would result?

20. To the axis of what kind of flower is the term torus applied?

21. What is a perfect flower?

22. What is a multilocular fruit?

23. What are the essential parts of a seed?

24. What kind of æstivation is of the most frequent occurrence in the polypetalous corolla?

25. The Linnean classes, and on what founded?

26. The Linnean orders, and on what founded?

27. What are the primary sub-divisions of the vegetable kingdom, according to the system of natural affinities; and what are the chief anatomical differences in those divisions?

28. What are the prevailing numbers amongst the two first sub-divisions of the vasculares?

29. Is the presence of albumen universal in any group you are acquainted with?

30. What are the functions of the cotyledons, and do they appear to be necessary only to such plants as derive their nourishment from the earth?

31. What is the Linnean class and order of iris, and the natural family to which it belongs; and how does that differ from hemodoracea and amyryllidæ?

32. —— colchicum and natural family; and how does that family differ from smilacea and liliacea?

33. —— narcissus; and how is the family distinguished from liliacea?

34. —— daphne and natural family; and by what characters is this family separated from proteacea?

35. —— digitalis, and its natural family?

36. —— atropa? Distinguish the genus from hyoscyamus, and the family from digitalis.

37. —— menyanthes, and natural family? Distinguish the genus from the rest of its order, and how separated from apocynea?

38. —— cinchona, and natural family; and how distinguished from caprifolia and apocyma?

39. —— carum? Add the structure of the fruit and seed, and the names of the more poisonous plants of the order.

40. —— helleborus, and natural family; and how is that family separated from trollius?

41. —— citrus, and natural family; and how separated from meliacea?

42. —— acacia, and natural family; and how is it distinguished from most of the other orders?

43. —— croton, and natural family; and what is the structure of the fruit and seed?

44. —— piper, and natural family; and are they with or without albumen; and by what means is the family distinguished from urticæ?

45. —— juniperus, and natural family? What is the nature of the fruit, and what are the peculiarities of the structure in the reproductive organs in this family?

COMPARATIVE IRRITABILITY OF THE RIGHT AND LEFT PORTIONS OF THE HEART.

M. Castel lately gave an account, in the Academie de Médecine, of some observations made by him and M. Amussat, concerning the much greater supply of nerves to the right than to the left side of the heart; whence the former preserves its irritability so much longer than the latter. M. Hippolyte Cloquet supported this view, and mentioned that the right portion of the heart receives eight or ten nervous branches, while the left is supplied with no more than four or five: a fact already noticed by Scarpa, and Walter of Berlin. —*Gaz. des Hôp.*

ABORTION EXTRAORDINARY.

FŒTUS VOMITED BY A BOY.

A Greek journal, the *Soter*, of the 31st August last, contains an account, drawn up by Dr. Ardoin, of a fœtus vomited by a boy, named Demetrius Stamatelli, a native of Syra. M. Ardoin was called in to attend the patient, who was suffering from pains of the stomach and bowels. The symptoms were so serious as to threaten the boy's life. However, the Doctor ventured on an *emetico-purgatif*, consisting of castor oil, an ounce; syrup of coraline and syrup of ipecacuanha, half an ounce each; exhibited in a pectoral decoction by way of julep. Violent cough and vomiting were produced, in the course of which the young Demetrius threw up the aforesaid fœtus. It is described as an embryo of from forty to fifty days: the head and one arm well formed, but, in lieu of the lower extremities, the body contained in a sheath, which runs as a cord to the *placenta*. The boy recovered, and the phenomenon has been regularly put up in a bottle. M. Ardoin has of course taken care, by the presence of witnesses, to assure the curious and to satisfy the sceptical that there has been no mistake.—*Abridged from the Gaz. des Hóp.*

MANSLAUGHTER BY DISPENSING IMPROPER MEDICINE.

In a case which recently happened in France, of three children being killed by the negligence of a pharmacien and the ignorance of his pupil, who gave corrosive sublimate in place of calomel, ordered in a physician's prescription, sentence has been passed on the accused. Estienne, the pharmacien, is fined 600 fr. with costs; Brandilly, the pupil, to be imprisoned a month; and both to make up between them the sum of 2000 fr. as damages, payable to the father of the children.

MEDICAL STUDENTS IN PARIS.

The inscriptions for the present season, up to the 15th November, have been 2519. The entire number of students is reckoned at 3500.—*Gaz. des Hóp.*

LITERARY INTELLIGENCE.

In course of publication, at Brussels, *Cours complet d'Histoire Naturelle Médicale et Pharmaceutique*; appearing in Parts. To form, when complete, two 8vo. volumes, with an Atlas of 150 plates.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO RECEIVED CERTIFICATES DEC. 11, 1834.

Henry Hayward, Aylesbury.
Anthony Dolce, Aylesbury.
Charles Goodwin, Norwich.
John Hughes, Hanrwst.
Charles Stokes, London.
Wm. Thomas Dalby, Bow, Middlesex.
Edward Henley Finley, London.
Charles M. Dermott, London.
William Jones, Henley in Arden.
Joseph Blackshaw, Stockport.
William John Gage, Shefford.
Henry Elsegood, London.

WEEKLY ACCOUNT OF BURIALS,

From Bills of Mortality, *Dec.* 9, 1834.

Abscess	7	Inflammation	125
Age and Debility	157	Bowels & Stomach	22
Apoplexy	27	Brain	15
Asthma	60	Lungs and Pleura	31
Cancer	8	Insanity	5
Childbirth	19	Jaundice	2
Cholera*	32	Liver, diseased	22
Consumption	253	Locked Jaw	2
Convulsions	98	Measles	41
Croup	8	Miscarriage	5
Dentition or Teething	21	Mortification	10
Diarrhœa	4	Paralysis	7
Dropsy	47	Small-Pox	30
Dropsy on the Brain	37	Sore Throat and Quinsey	1
Dropsy on the Chest	1	Spasms	3
Epilepsy	1	Stone and Gravel	2
Erysipelas	1	Thrush	4
Fever	52	Tumor	2
Fever, Scarlet	30	Venereal	1
Fever, Typhus	9	Worms	1
Heart, diseased	7	Unknown Causes	162
Hernia	1		
Hooping-Cough	59	Stillborn	40
Hydrophobia	2		
Indigestion	3		

Increase of Burials, as compared with the preceding week . . . } 1070

* The great increase in the number of burials inserted in this week's Bill of Mortality, has arisen from several of the clerks of large parishes having withheld their reports till the close of the year; from the same circumstance is to be imputed the seeming increase of deaths by cholera.

METEOROLOGICAL JOURNAL.

Dec. 1834.	Thermometer.	Barometer.
Thursday . 4	from 40 to 51	30·16 to 30·14
Friday . . 5	29 45	30·07 30·03
Saturday . 6	30 50	30·00 30.02
Sunday . . 7	41 57	30 06 30·07
Monday . . 8	39 47	30·06 30·13
Tuesday . . 9	31 45	30 42 30·36
Wednesday 10	29 47	30·15 30·30

Prevailing wind, S.W.

The 4th cloudy, except the evening; the morning and evening of the 5th very foggy; the 6th, 7th, and morning of the 8th, cloudy, with rain at times on the two latter days; the 9th generally clear; rain on the morning of the 10th, otherwise generally clear.

Rain fallen, ·425 of an inch.

Notice.—Dr. Turnbull's paper on "Aconitine" has been received. We cannot give it insertion, and have therefore returned it to our publishers.

W. Wilson, Printer, 57, Skinner-Street, London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, DECEMBER 20, 1834.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture XII.

DISEASES OF THE PARENCHYMATOUS STRUCTURE OF THE LUNGS.

EMPHYSEMA PULMONUM.

We define emphysema pulmonum to be a dilatation of the air cells of the lungs, or an infiltration of air into the cellular substance which separates the lobules of that organ from each other. The first species may be called *vesicular emphysema*, the second *interlobular emphysema.*

VESICULAR EMPHYSEMA.

Morbid anatomy.—The size of the aerian vesicles increases from the slightest addition to their volume, to the magnitude of a grain of millet-seed—to the kernel of a cherry—to a bean; or they may enlarge, in extreme cases, to a capacity sufficient to hold a pint of fluid. In the latter cases this great development is due to a rupture of a vast number of cells into each other; for you may see the *debris* of their partitions upon the inside of the transparent parietes of the unilocular cavity formed by them.

[A number of beautiful specimens of vesicular emphysema were now exhibited, in which the cells were seen dilated from the size of a millet seed, to a volume whose capacity would contain more than a pint of fluid.]

The smaller dilated cells do not project beyond the surface of the lungs, the larger ones usually do; the latter presenting the vesicular appearance of blisters. These large projecting cells are often globular, and sometimes pediculated; but the pedicles are only formed by strangulations of the cells, where the vesicles emerge from the pulmonary substance; and in cutting into them, and passing a probe through the pedicle, as large a cavity will be found embedded in the substance of the organ as there is projecting beyond it. At the bottom of the dilated cells you perceive here, gentlemen, several dark orifices, which are the openings of communication with the surrounding air vesicles. It is clear, as Laennec has observed, that these dilatations do not depend upon extravasations of air, because of the continuation of their cavities into the substance of the lung, and because they cannot be pushed by the finger from point to point under the pleura. It, however, does occasionally happen, that in consequence of the rupture of the cells, the air passes into the interlobular cellular tissue, and beneath the pleura, forming irregular vesicles of various sizes, which may be displaced by the finger, but they have no depressions in the substance of the lungs corresponding with them, like the previously described species.

Although it be rare for the air to permeate the interlobular cellular tissue, or the cellular substance surrounding the bronchial tubes and great blood-vessels, yet such may be the distention of the central aerian cells, that their bursting may occasion a rupture of the pulmonary tissue; then the part of the lung corresponding to the rupture will be seen largely swollen; and on cutting into it at this place, to a greater or less depth, a cavity will be found from whence air will escape, this cavity often containing a little blood, generally coagulated, but always small in

quantity compared to the space in which it is contained.

The bronchial tubes, particularly the smaller ones, communicating with the dilated cells, are occasionally, although not frequently, dilated also.

There are two modes of preparing specimens of emphysema pulmonum; the one by forming a dry, the other a wet preparation. To make a dry preparation, the lung should be well distended by insufflation, and the bronchial tube, through which you have distended, should then be firmly tied, and the specimen be dried pretty quickly. You will soon find that your preparation will shrivel and contract, from the escape of air through some imperceptible orifice; it becomes, therefore, necessary to renew the insufflation during the drying several times. When quite dry it should be varnished, and sections made by a sharp razor or scalpel, and the dilated cells will thereby be very well shewn. The other mode is effected by immersing the emphysematous lung in spirits of wine. A preparation of this sort requires a large weight to keep it down in the bottle, in consequence of the buoyancy of the organ from the increased quantity of air it contains. You perceive, gentlemen, that this preparation, contained in a vessel not holding a pint and a half of liquid, requires above two pounds of mercury to keep it at its proper level.

Vesicular emphysema may affect a part of a lung, the whole of a lung, or both lungs. When the disease is extensive, the moment you elevate the sternum a part of the organ escapes from the chest, as if there was not sufficient room for it, and projects externally, instead of subsiding as it usually does. The lungs now feel to the hands like a down pillow; they give the impression of greater firmness than natural; the crepitation, upon pressure, is of a different character; and if an incision be made, and the air pressed out, a sound is produced like air passing slowly through a bellows. Laennec believes these phenomena to arise from the communication between the air cells and the bronchial tubes being less free, or from a diminished flexibility of the parietes of the vesicles, or perhaps from a combination of these two causes.

An emphysematous lung swims on water almost like a bladder distended with air. The pulmonary tissue is usually drier in an emphysematous than a healthy lung; exceptions to this are rare.

When one lung only is affected, it is much more voluminous than the other; in that case it may press the mediastinum and the heart from their natural positions, and even enlarge the side of the chest corresponding to the diseased organ.

Emphysema pulmonum had been indistinctly seen by several authors, as Bonetus, Morgagni, Van Swieten, and Storck. Sir John Floyer, in the appendix to his Treatise on Asthma, gives an account of the disease in a broken-winded mare. Ruysch and Valsalva had seen dilated air cells; and Baillie has given a good description of them. Laennec's account of the disease, which I have almost given literally, is, however, by far the most minute and correct.

Causes of vesicular emphysema.—Laennec, in the year 1823, gave, in his lectures at the "College de France," the following explanation of the physical causes of this disease:—

Vesicular emphysema almost always develops itself in consequence of intense, extensive, or long-continued dry catarrh. Almost all asthmatics from that form of catarrh, present, upon post-mortem examination, a dilatation, more or less marked, of the air-cells. I never saw any patient affected by dyspnœa, from any cause, of a few years' standing, without detecting this disease in various degrees. Laennec observes, that, in dry catarrh, the small bronchial tubes are often completely obstructed, either by pearly sputa or by the swelling of their mucous membrane: and as the inspiratory muscles are strong and numerous, their action is sufficient to overcome this obstruction, so that the air can pass with more or less freedom into the cells, where it becomes, as it were, imprisoned, in consequence of the expiratory power being insufficient fully to force it back again through the obstruction. A long succession of inspiratory acts will, under these circumstances, at last permanently dilate the air-vessels to an extent proportionate to the degree and duration of the obstructing cause. We must also recollect that the atmospheric air is introduced into the lungs at a temperature much lower than that of those organs, so that it dilates in proportion to the increased heat, and consequently must tend to dilate the cells in which that air is contained. It follows, from what has been said, that dry catarrh ought mechanically to produce vesicular emphysema, as much as chronic mucous catarrh leads to dilatation of the bronchial tubes.

There are some other causes which may produce this disease: thus players upon wind instruments are often obliged to retain the air forcibly, and for a long time, in the air-cells, and thereby occasion their dilatation. Certain other violent respiratory acts may also be considered as causes; but these I shall particularly refer to in speaking of interlobular emphysema.

Any cause also which prevents the free emergence of the air in expiration, may

produce vesicular emphysema: thus tumors developed in the bronchial or mediastinal glands, or aortic aneurisms compressing the bronchi; tumors of a certain size formed in the lung itself—as cysts, or masses of tubercles—will partially produce this effect.

There is another cause, which Laennec has not noticed, which I have seen acting in two or three instances. In consequence of extensive disease in one lung, the puerile respiration sometimes becomes so extreme in the other as to occasion the air-cells to dilate. The following remarkable case exemplifies this fact.

I was called to a child of five or six years of age, labouring under very severe dyspnœa of a few days standing, in whom the face had become livid, the pulse lost, and the extremities cold. Every thing indicated approaching death; indeed the child expired a few hours after I saw it. Such was the distress of the little sufferer, that I would not add to it by making a useless local examination of its chest. Upon a post-mortem examination, we found that percussion afforded a very dull and fleshy sound on the left side, whilst the right was exceedingly sonorous. On opening the pectoral cavity, the left lung was found to be hepatized to nearly the whole of its extent—a circumstance already sufficiently rare in so young a child. The right lung was depressed in the chest, and of nearly one-third its original volume, and covered by large vesicles, presenting the appearance of a number of elevated blisters upon the surface of the organ. The space in the chest unoccupied by the lung was filled with air, part of which had escaped, with a hissing noise, upon the first incision made through the ribs of the right side. The lung itself, when taken out, presented a most beautiful specimen of vesicular emphysema.

No doubt, in this case, the hepatization of the left lung had increased the necessity for respiration in the right—a necessity already great from the age of the child. Its natural puerile respiration became so intensely developed, the energy of the function so extraordinarily great, as to largely dilate the air-cells of the healthy lung. Some vesicle must have ruptured, perhaps by a very minute orifice, so that a certain quantity of air passed in every inspiration into the cavity of the pleura, and, by its gradual accumulation, pressed upon the lung, and diminished it to the volume I have mentioned. We had, therefore, in this case, vesicular emphysema of one lung, in consequence of hepatization of the other, and pneumo-thorax as a result of the emphysema.

SYMPTOMS OF VESICULAR EMPHYSEMA.

Functional and general signs.—Dyspnœa invariably occurs when the disease has become somewhat considerable: the reason is obvious. The expiratory act cannot expel a sufficient quantity of air at each movement, so that too great a proportion remains in the cells, deprived of its oxygen, and preventing by its presence a complete renewal during inspiration. The mode of respiration is peculiar; in extreme cases, you will see the patient expand his chest in every direction, as if he were endeavouring, by a strong effort, to sweep out and displace the vitiated air contained in his lungs.

Various causes may augment the dyspnœa; as flatulence of the stomach or intestines, preventing the free descent of the diaphragm—emotions of the mind—exercises of the body, as running, hard working, &c., by which the blood is sent with too great rapidity to the lungs.

The dyspnœa finally becomes constant; but it will sometimes be considerably aggravated by a fresh inflammation attacking the already-obstructed bronchial tubes, or by a spasmodic action of them. When this occurs, then it constitutes a form of dry asthma, which we shall hereafter describe. After the asthmatic paroxysm is over, the ordinary state of dyspnœa returns.

As the blood does not flow freely through the lungs, venous congestions have a tendency to form; thus, at last, the skin presents an earthy tint, often mixed with a dull violet or lead colour. The veins on the surface frequently enlarge, the lips appear thick and swollen, and of a leaden hue; and, according to my observations, emphysematous patients are more disposed to sleep, particularly after a meal, than others; probably from a greater disposition to temporary cerebral venous congestion.

There is generally habitual cough—often however infrequent, slight, and dry. If there be expectoration, it is usually viscous and transparent: the cough is rarely violent, or followed by mucous sputa.

The constant obstruction to the free passage of blood through the lung, ultimately occasions hypertrophy and dilatation of the heart.

Local signs.—When emphysema attacks one lung only, or when it exists much more considerably on one side than the other, then the diseased side is evidently the most voluminous. If both sides are equally affected, the chest presents at once a globular and a cylindrical form; being swollen before and behind, instead of being somewhat depressed in those situations.

By *percussion*, a much louder sound than natural is elicited, in consequence of the great accumulation of air in the lungs.

The respiratory murmur is very imperfectly heard in an emphysematous lung; now and then a sibilating sound, or a sound like the clicking of a small valve, may be distinguished, indicating the presence of pearly sputa.

But when the disease is intense, then there is a sign which is pathognomonic: it consists in a species of dry crepitating sound, before described under the name of rhonchus crepitans, with large bullæ; it is a sound heard when the patient coughs or inspires strongly, like air blown into half-dried cellular tissue. It differs from the ordinary crepitation of peripneumonia, or œdema of the lungs, by its carrying with it the sensation of dryness, and by the greater size and inequality of the bullæ which compose it.

This phenomenon is rare, and of short duration: it is heard only for a few moments, and to a slight extent. It is much more common in interlobular emphysema: some patients feel a crackling at the point affected at the moment the crepitation is heard; sometimes, though rarely, the vibration of the sound is communicated to the hand pressing the parietes of the chest.

Progress of the Disease.—Laennec observes, that this organic alteration of the cells most commonly arises from the grafting of acute dry catarrh upon the chronic form; and dry catarrh being, of all others, that which is most accompanied by tumefaction of the bronchial mucous membrane, it may readily be conceived how an obstruction of the smaller tubes may produce a dilatation of the aerian vesicles.

The frequent returns of acute dry and latent catarrhs, often induce an asthmatic paroxysm; but these are not the sole causes of this affection, as we shall hereafter see.

If, upon chronic dry catarrh, the acute form supervenes, the dyspnœa becomes almost suffocating. This oppression diminishes if fever co-exists, or a pituitous or mucous expectoration appears. The pearly sputa become less tenacious, and are carried from the bronchial tubes by the more liquid secretion which accompanies the recent catarrh. But if the fresh accession of catarrh leads to no ultimate relief of the chronic disease, then the attack will be prolonged; it finally gradually diminishes, and often leaves the patient more oppressed than before. Violent attacks of dry asthma occur at long intervals during the first few years; but if the emphysema has been of long duration, and as old age approaches, the accesses approximate more closely, and become of greater intensity; each of them increases the extent of the dilatation of the air cells, which in these cases sometimes rupture, and produce the interlobular form of the disease.

Treatment.—We have but little to say upon this subject. The indications here are to subdue the dry catarrh, which is the mechanical cause of the emphysema, and then to diminish the volume of the enlarged vesicles. To fulfil the first indication, the same treatment must be adopted that I have recommended for dry catarrh, which it is needless here to recapitulate; I refer you to the lecture upon that subject. I know of no possible means of fulfilling the second indication, that is, to diminish the volume of the emphysematous air cells, for they have been subjected to an organic change, and the present state of science affords no means by which that change can be obviated.

INTERLOBULAR EMPHYSEMA.

Vesicular emphysema is generally a chronic affection; interlobular emphysema is a sudden and acute disease, the result frequently of accident.

Morbid Anatomy.—Dense as the cellular tissue is which separates the pulmonary lobules, yet it occasionally becomes infiltrated with air. These slight partitions now increase in breadth, from a line to five or six lines, or even an inch, forming, particularly towards the edges of the lungs, transparent bands, plunging more or less deeply into their substance. These bands are broadest at the surface of the organ, and become gradually narrower as they descend towards the centre. They sometimes run parallel; at others, traverse each other, so as to isolate one or many lobules, according to the extent of their intersections. Small grains, as it were, of air, run frequently in the cellular tissue surrounding the blood-vessels and bronchial tubes, often also extravasating beneath the pleura; and when the air penetrates to the root of the lungs, it passes from thence into the mediastinum, and so to the neck, and the cellular tissue of the rest of the body.

It might be supposed that this disease could only arise from the rupture of a number of cells, and that the air passed from thence into the surrounding cellular tissue. It may be so; but the broken cells have not yet been detected, nor are the vesicles contained in the isolated lobules even dilated.

Sometimes the mass of air is so broad in the interlobular cellular tissue, that it is difficult to suppose that it has not infiltrated into the whole of a lobule, and by insinuation between the cells, compressed

them, and occasioned them thereby to be reduced to their mere cellular rudiment: yet no positive evidence exists of this circumstance.

Causes of Interlobular emphysema. — Any cause by which the air is retained a long time, and with violent effort, in the lungs, may induce this disease—as the resolute attempt to lift too great a weight, the efforts of accouchement, of defecation, &c.

Can air be generated spontaneously in the interlobular cellular tissue? It is possible; for we see exhalations of gaseous fluids occur in cavities where no communications exist with the external air—as in the peritoneum, pericardium, and within the synovial membranes.

It would appear surprising, considering the extreme dyspnœa which occasionally takes place from vesicular emphysema, that the dilated cells do not rupture, and produce the interlobular species: this, however, has never yet been seen. It is true that sometimes a little air will escape under the pleura; and I have seen an instance of the cells rupturing through the pleuritic covering of the lung, inducing pneumo-thorax; but I believe no instance is known of vesicular emphysema producing interlobular. This, in all probability, is due to the increased firmness of the cells when permanently dilated, and to the extreme density of the interlobular cellular substance.

Local Signs of Interlobular Emphysema.— The dry crepitation with large bullæ is the pathognomonic sign of this disease. The "frottement ascendant and descendant" are also signs: the first occurs at the moment of inspiration; and at this time, too, the crepitation may be distinguished: the second accompanies expiration. It is sometimes heard once, and at one moment only; at others, two or three times successively; occasionally, only when the expiration is completed, and it then appears as if something descended into its usual situation. Usually the rubbing seems to be against the costal pleura; now and then against the diaphragm, or deeply against the mediastinum, or among the pulmonary lobules. A crackling at the affected part is often felt by the patient.

These sounds often communicate their vibrations to the hand. The crepitation may even be produced occasionally by pressing the finger against an intercostal space, corresponding to the part of the lung affected.

By percussion you may always elicit a loud sound, except there be any co-existent pulmonary engorgement at the emphysematous part.

If the emphysema attack the neck, then, by pressing the part, crepitation is produced, and the diagnosis becomes still more complete.

General and functional signs. — Sudden dyspnœa after the occurrence of any of the above-mentioned causes. Infants are most commonly attacked with this disease: thus it may occur in them as a consequence of croup, or of severe catarrh. It may occur also in adults, although not so frequently, under the same circumstances.

Treatment.—Very little can be done in this disease, and fortunately it is an affection which has rarely any serious results. When the air infiltrates into the subcutaneous cellular tissue, a few punctures with the lancet will be ordinarily sufficient to allow of its escape. When the disease is confined to the lung, in every case the air appears to be absorbed, and the interlobular cellular septa return gradually to their natural size.

THE ANATOMY AND PHYSIOLOGY OF THE LIVER.

By Francis Kiernan, Esq.

Member of the Royal College of Surgeons, late Teacher of Anatomy.

[Concluded from p. 364.]

Of the lobular arteries.—The lobules are sparingly supplied with arterial blood. These bodies cannot be coloured with injection from the artery, even in the young subject; in the adult, after the most successful injection, when the arteries of the cellular capsule, those of the excreting ducts and gall-bladder, and the vasa vasorum are minutely injected, a few injected vessels only are detected entering the lobules. I have frequently tied the thoracic aorta in living animals, thereby cutting off all supply of blood from the abdominal viscera; and in these animals, when injected from the aorta below the ligature forty-eight hours after death, the integuments, the secreting portions of the kidneys, the spleen, pancreas, intestines, and pelvic viscera, were coloured in a remarkable degree by the injection; on the surface of the liver a few vessels only could be discovered, this organ presenting a curious contrast with the surrounding coloured viscera. The gall-bladder and ducts were, however, equally well injected with the intestines; the vasa vasorum were also well injected. In these experiments it will be remarked that the secreting portion alone of the kidney was highly injected; the excreting portion of this gland resembling the secreting portion of the liver in its sup-

ply of arterial blood, which it receives for nutrition only. Similar experiments were tried on birds, and in these animals all the viscera were highly injected, with the exception of the liver and kidneys, the latter organs in oviparous animals having, like the liver, a double venous circulation, the urine, as well as the bile, being secreted from venous blood. Whether the liver be injected from the aorta, or from the hepatic artery, the appearances produced will be nearly the same. In speaking of the excreting ducts, it was shewn that these vessels are abundantly supplied with arterial blood, which is received by branches of the portal vein; the injection very commonly passes from the arteries into these branches, and thence into the trunks of the vein, and it occurred to me, that the injection thrown into the arteries was probably in this manner diverted from the lobules. To ascertain if such was the case, blue injection was first thrown into the portal vein; the arteries were then injected with red. On dissection, branches of the two sets of vessels were found in the coats of the vessels, and in those of the excreting ducts and gall-bladder; the lobules were coloured with the blue injection; the red was confined to their circumference, and appeared in points only. This experiment was varied, by injecting the portal vein and its branches as far only as the entrance of the latter into the lobules, these bodies thus remaining uninjected. The injection propelled through the arteries had now free access to the uninjected lobules, and no exit by the injected portal vein; and the artery having no communication with the hepatic veins, the injection had no exit by these vessels: the lobules, however, were not better injected in this than in the preceding experiments. From these experiments I conclude, that the secreting portion of the liver, like the excreting portion of the kidney, is supplied with arterial blood for nutrition only. As all the branches of the artery of which we can ascertain the termination end in branches of the portal vein, it is probable that the lobular arteries terminate in the lobular venous plexuses formed by that vein, and not in the intralobular branches of the hepatic veins, which cannot be injected from the artery, the blood of these arteries, after having nourished the lobules, becoming venous, and thus contributing to the secretion of the bile.

Müller is also of opinion, that the ultimate reticulated vessels of the liver receive blood from the artery as well as from the portal vein.

Of the red and yellow substances of Ferrein, and of the appearances produced in the liver by congestion.—The structure of all the lobules is similar, and each lobule is of the same structure throughout; one part of a lobule is not more vascular than another; there is, therefore, no distinction of red and yellow substances in the liver; the red colour results from congestion only. Ferrein's opinion respecting the existence of two substances has been very generally adopted by anatomists; some, however, have disagreed with him respecting their relative position to each other.

My attention was first directed to the anatomy of the liver by the study of the admirable works of M. Andral. In the first organs I examined, I found the small branches of the hepatic veins ramifying exclusively in the red, and those of the portal vein in the yellow substance. I concluded that the liver was composed of two venous trees, a portal and an hepatic tree, the former having a cortex of yellow, the latter of red substance; and, with M. Boulland, I thought it probable that the red substance was the organ of the function imagined by Bichat. I next ascertained the lobular structure, and concluded with Ferrein that the red substance was medullary, and the yellow cortical. Subsequent dissections, in which I found branches of both the portal and hepatic veins ramifying in the red substance, tended to unsettle the opinions I had formed respecting the anatomy and physiology of the two substances; and these opinions were finally overturned by the examination of a liver in which I found the branches of the portal vein alone ramifying in the red, and those of the hepatic veins in the yellow substance. The only conclusion that could be drawn was, that the red colour resulted from congestion; that it was medullary, occupying the centre of each lobule, when the hepatic, and cortical, forming the circumference, when the portal vein, was congested. It occurred to me that the kidneys of birds having, like the liver, a double venous circulation, were equally subject to congestion, and would, like it, present an appearance of two substances. Dissection verified this conjecture; but the apparently two substances are red, one, however, being of a much deeper colour than the other. I have satisfied myself by repeated injections, by examination with the microscope, and by experiments on living animals, that the lobules are of the same structure throughout; that one portion of a lobule is not more vascular than another; that the acini of Malpighi, by contrast with the congested vessels, are even more apparent in the red than in the yellow substance; and that these supposed two substances are consequently identical in structure. That secreting biliary ducts are contained in the

red as well as in the yellow substance, is proved by the relation given by M. Andral of a case of jaundice, with "coloration insolite du foie." "Foie volumineux, pesant, très-dur, se déchirant difficilement, offrant une teinte générale d'un brun verdâtre. En l'examinant avec plus d'attention, on trouve que cette teinte n'est pas uniforme, et que le parenchyme du foie est formé, 1. par un tissu d'un blanc verdâtre, disposé sous forme de lignes ou de plaques irrégulières (c'est le tissu blanc ordinaire hypertrophié); 2. par un tissu d'un vert brun foncé, duquel dépend la couleur générale que présente le foie, et qui est l'analogue du tissu rouge ordinaire." This was a case of vitiated biliary secretion, with general biliary and partial sanguineous congestion. The ordinarily yellow substance was of a greenish white colour, being congested with greenish bile only; the ordinarily red substance was of a deep brownish green, this colour evidently resulting from biliary and sanguineous congestion combined. I have met with more than one case of this kind; I have also seen cases of jaundice in which there was no biliary congestion of the liver, and the highest state of biliary congestion without jaundice. In attempting to estimate the causes of the various shades of colour observed in the liver, it is not sufficient to examine the cystic bile alone; the hepatic bile should be also examined; and it will be generally found, as in the above case, that these shades of colour depend either on biliary or sanguineous congestion alone, or on the various combinations of both.

Sanguineous congestion of the liver is either general or partial. In general congestion the whole liver is of a red colour, but the central portions of the lobules are usually of a deeper hue than the marginal portions. Partial congestion is of two kinds, hepatic-venous and portal-venous congestion. Of the first kind there are two stages. In the first and most common stage, the hepatic veins, their intralobular branches, and the central portions of the plexuses, are congested. The congested substance is in small isolated patches of a red colour, and, occupying the centres of the lobules, it is medullary; the non-congested substance is of a yellowish white, yellow, or greenish colour, according to the quantity and quality of the bile it contains: it is continuous throughout the liver, and, forming the marginal portions of the lobules, is cortical. This is passive congestion of the liver; it is the usual and natural state of the organ after death, and probably arises from its double venous circulation. In the second stage, the congestion extends through the plexuses to those branches of the portal vein situated in the interlobular fissures, but not to those in the spaces, which being larger than, and giving origin to, those in the fissures, are the last to be congested; when these vessels contain blood, the congestion is general, and the whole liver is red. In this second stage, the non-congested substance appears in isolated, circular, and ramous patches, in the centres of which the spaces and fissures are seen. This is active congestion of the liver; it very commonly attends disease of the heart, and acute disease of the lungs or pleuræ: the liver is larger than usual, in consequence of the quantity of blood it contains, and is frequently at the same time in a state of biliary congestion, which probably arises from the sanguineous congestion. Although in the first stage, the central portions of the plexuses, and in the second, the greater portion of each plexus, and those branches of the portal vein occupying the fissures, are congested, and although the plexuses are formed by the portal vein, yet, as this form of congestion commences in the hepatic veins, and extends towards the portal vein, and as it is necessary to distinguish this form from that commencing in the portal vein, the term of hepatic-venous congestion will not probably be deemed inapplicable to it. Portal-venous congestion is of very rare occurrence; I have seen it in children only. In this form, the congested substance never assumes the deep red colour which characterizes hepatic-venous congestion; the interlobular fissures and spaces, and the marginal portions of the lobules, are of a deeper colour than usual; the congested substance is continuous and cortical, the non-congested substance being medullary, and occupying the centres of the lobules. The second stage of hepatic-venous congestion, in which the congested substance appears, but is not, cortical, may be easily confounded with portal-venous congestion.

The physiological deductions arising out of the preceding anatomical facts are extremely simple. If it could be shewn that two substances exist in the liver, it might be fairly presumed that this organ executes two functions; but each lobule being, in itself, a perfect gland, and of the same structure throughout, each lobule, and consequently the whole liver, executes but one function, the secretion of bile.

It has been shewn that all the vasa vasorum of the liver are branches of the hepatic artery and portal vein; that branches of the portal vein arise in the coats of the hepatic vein themselves; and that the veins of the coats of the vessels constitute the hepatic origin of the portal vein. The arterial blood having circulated through the coats of the vessels, becomes venous, and is conveyed by the veins arising in the coats of the vessels into those branches of

the portal vein which correspond to the vessels in the coats of which the veins arise: thus, from the coats of the vaginal ducts, veins, and arteries, they convey the blood into the vaginal veins; and from the coats of the interlobular ducts, veins, and arteries, into the interlobular veins. From the coats of the hepatic veins and inferior cava, the blood is conveyed into the interlobular portal veins. In the vaginal and interlobular veins, the blood conveyed from the coats of the vessels becomes mingled with the proper portal blood. This mixed blood is conveyed by the interlobular veins into the lobular venous plexuses, in which the lobular arteries probably terminate, after having nourished the secreting ducts. From the mixed blood circulating through the plexuses, the bile is secreted by the lobular or secreting biliary plexuses.

The blood which enters the liver by the hepatic artery fulfils three functions; it nourishes the liver; it supplies the excreting ducts with mucus; and, having performed these purposes, it becomes venous, enters the branches of the portal vein, and contributes to the secretion of the bile. The portal vein fulfils two functions; it conveys the blood from the artery, and the mixed blood to the coats of the secreting ducts. It has been called the *vena arteriosa*, because it ramifies like an artery, and conveys blood for secretion; but it is an arterial vein in another sense, being a vein to the hepatic artery, and an artery to the hepatic vein. The hepatic veins convey the blood from the lobular venous plexuses into the vena cava inferior.

M. Simon concluded from his interesting and ably conducted experiments, that the bile is secreted from the portal blood alone; and Mr. Phillips arrived at the same conclusion, from the issue of two experiments in which he tied the hepatic artery, the details of which are in the possession of the Royal Society. From the issue of three experiments in which the portal vein was tied, and in which bile was secreted, and from the cases related by Mr. Abernethy and Mr. Lawrence, Mr. Phillips concluded that bile might be secreted from arterial blood alone*. I have shewn that the bile is secreted from venous blood alone, this blood being composed of the two streams which enter the liver by the portal vein and hepatic artery; and from the anatomical details into which I have entered, it is evident that bile will be secreted, but in different quantity, whether the vein or the artery be tied, and from venous blood in both cases. The quantity of arterial blood conveyed to the liver is so small, and death so soon follows the ligature of the vein, that in experiments on rabbits and kittens, in which I tied the vein, I cannot say that bile was secreted.

It appears to have been satisfactorily ascertained by Tiedemann and Gmelin, and by M. Voisin, that the bile is a purely excrementitious fluid, stimulating the intestinal canal, but having no influence on the formation of the chyle. The lungs separate from venous blood an excrementitious matter in a gaseous form; the liver, extracting from venous blood an excrementitious fluid, may be considered as the abdominal lung.

A few eminent physiologists, founding their opinion on false anatomical data, on the cases related by Mr. Abernethy and Mr. Lawrence, and on the absence of the hepatic-portal vein in the invertebrated animals, in which the liver is supplied with arterial blood only, maintain that the bile is secreted from arterial blood. Since the conclusions contained in this paper, respecting the physiology of the liver, were first submitted to the Society, I have been enabled, through the kindness of Mr. Stanley, to examine the liver of the child in which Mr. Abernethy found that the portal vein terminated in the inferior cava. Mr. Abernethy's account of the case is contained in the Philosophical Transactions for 1793. Mr. Green, in his anatomical lectures, had always described this case as presenting less anomaly than was commonly supposed. He considered that the umbilical vein ramified through the liver, that the artery probably terminated in it, and that the vein and not the artery conveyed the blood to the secreting part of the liver. Sir Charles Bell also, in speaking of this case, makes the following highly interesting observations:—"We may observe on this case, that it does not prove the bile to be, in the natural economy, secreted by the arteries and not by the vena portæ; for the artery here was unusually large, so that it performed a function in this instance which it does not usually perform. Had the artery been of the usual size, we might then have concluded that the vena portæ was distributed to the liver to serve some lesser use in the economy of the system, and that it did not secrete the bile. The liver, it is said, was of the ordinary size. Now as the bulk of the liver is, in its natural state, made up of the dilated veins, it is some proof of what I should imagine had taken place here, that by some provision of the vessels, the arterial blood had been diffused, and the celerity of its motion checked, previous to its ultimate distribution. Nay, it may have opened into the branches of veins answering to the extremities of the vena portæ. I conclude, that this singular and interesting case may strengthen the opinion which some have entertained, that the extreme branches of

* Lond. Med. Gaz. June 29, 1833.

Fig. 5.

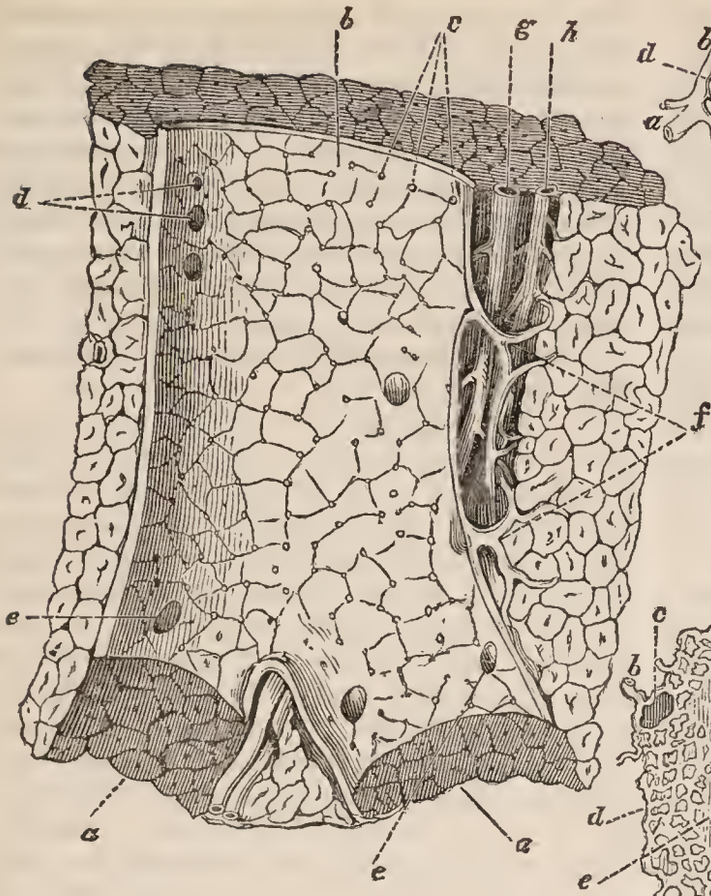

Fig. 7.

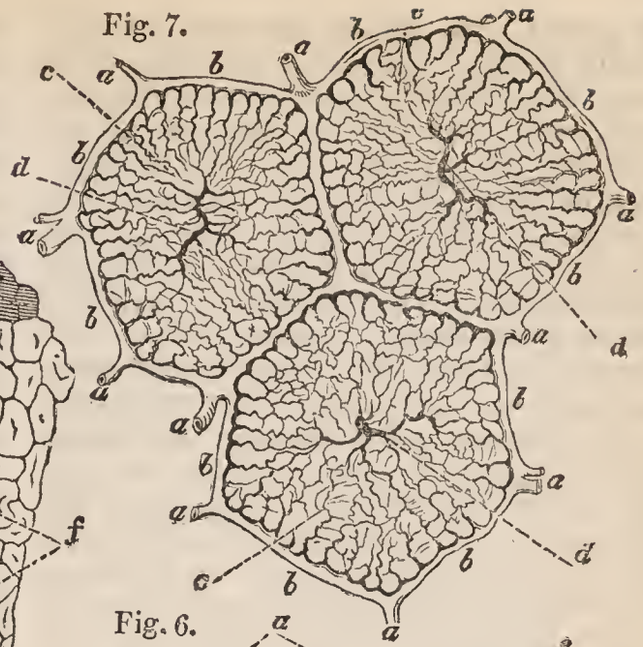

Fig. 6.

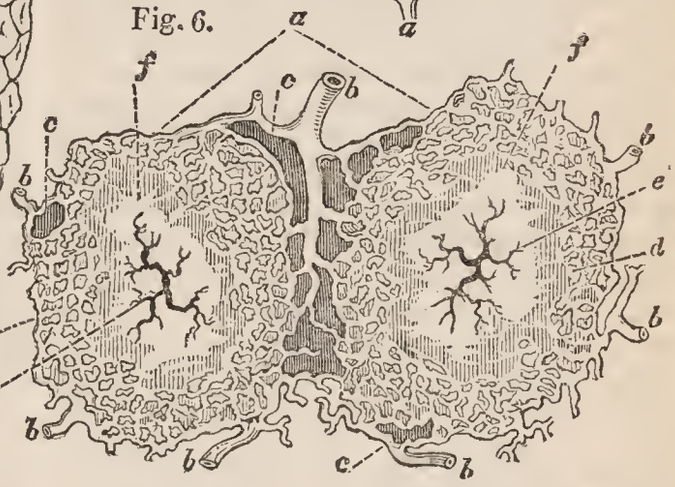

Fig. 5. A longitudinal section of a small portal vein and canal; the lobules are in a state of anæmia.

A, A. Portions of the portal canals, from which the vein has been removed. The parietes are composed of lobules, similar to those of the external surface of the liver, separated from each other by fissures and spaces.

B. The portal vein; the lobules and fissures are seen through its coats.

C. Mouths of interlobular veins, which, arising immediately from the portal vein, enter the spaces without forming a plexus. This portion of the vein, giving off no vaginal branches, and consequently having no capsule, resembles in these respects an hepatic vein.

D. Two larger orifices. These are the mouths of vaginal veins which enter the canal, and divide into two, three, or more interlobular branches.

E, E. The orifices of small portal veins, which enter other canals.

F. Vaginal branches arising from the vein, and forming a plexus on that side of the canal occupied by the duct and artery. These branches are seen dividing into branches which enter the spaces covered by the duct and artery.

G. The hepatic duct, giving off vaginal branches.

H. The hepatic artery, giving off vaginal branches.

Fig. 6. Represents the interlobular ducts entering the lobules, and forming the lobular biliary plexuses.

a. Two lobules.

b, b, b. Interlobular ducts.

c, c, c. The interlobular cellular tissue.

d, d. The external portions of the lobular biliary plexus injected.

e, e. The intralobular branches of the hepatic vein,

f, f. The uninjected central portions of the lobules.

No such view of the ducts as that represented in this figure can be obtained in the liver. The interlobular ducts are, in the figure, seen anastomosing with each other: I have never seen these anastomoses, but I have seen the anastomoses of the ducts in the left lateral ligament, and, from the results of experiments related in this paper, I believe the interlobular ducts anastomose. I have never injected the lobular biliary plexuses to the extent represented in the figure*.

Fig. 7. Representing the interlobular branches of the portal vein, the lobular venous plexuses, and the intralobular branches of the hepatic veins of three lobules.

a, a, a. The interlobular veins contained in the spaces.

b, b, b. The interlobular veins which occupy the fissures, and which, with the veins in the spaces, form venous circles around the lobules. This is the appearance which the venous circles present when examined with a common magnifying glass; they are, however, formed by numerous, and not by single branches, as represented in the figure.

c, c, c. The lobular venous plexuses, the branches of which, communicating with each other by intermediate vessels, terminate in the intralobular vein. The circular and ovoid spaces, seen between the branches of the plexuses, are occupied by portions of the biliary plexuses, constituting the acini of Malpighi.

d, d, d. The intralobular branches of the hepatic veins, in which the vessels of the plexuses terminate.

* See editorial note, next page.

the hepatic artery pour blood into the extremities of the vena portæ previous to this formation of the bile by these veins; but it still leaves us with the general conclusion, that the peculiarities in the distribution of the vena portæ are a provision for the secretion of the bile, and that the branch of the aortic system, the hepatic artery, is otherwise necessary to the support of the function of the liver."

I examined the liver of this child, which had not been examined by Mr. Abernethy, in the presence of Mr. Stanley, Mr. Mayo, and several other gentlemen, in the Museum of St. Bartholomew's Hospital. Mr. Abernethy had injected the arteries with red, and the hepatic veins with yellow size. As had been happily conjectured by Mr. Green and Sir Charles Bell, we found the open and uninjected ramifications of the umbilical vein (the hepatic-portal vein) accompanying, as usual, the branches of the hepatic artery and duct. By making sections of portal canals, we found the arteries, as Mr. Abernethy had described them, much larger than usual. In ordinary cases one principal artery is found in each canal; in this case two, and in some places three arteries, of equal calibre, were found in each canal. The branches of the umbilical, or portal vein, which are usually so much larger than those of the artery, were found, on the surfaces of sections of this liver, to be, as nearly as we could judge, equal in calibre to the united dimensions of the two or three arteries which accompanied each branch of the vein. Bichat, in support of his opinion that the bile is secreted from arterial blood, says, "On dit que le volume du foie est considérable, à proportion de l'artère hépatique; cela est vrai; mais ce n'est pas au volume de ce viscère qu'il faut comparer celui de cette artère pour savoir si elle fournit les matériaux de la sécrétion, puisque nous avons vu qu'il est impossible que toute sa substance soit destinée à séparer la bile. C'est avec les conduits biliaires et leur réservoir qu'il faut établir la comparaison: or, cette artère est exactement proportionée à ces conduits; il y a entre eux à-peu-près même rapport qu'entre la rénale et l'uretère; au contraire, les conduits biliaires sont bien manifestement disproportionnés à la veine porte." Bichat's opinion, and the argument here offered in support of it, are completely refuted by the dissection of the liver in this case. The branches of the duct were much smaller than those of the artery; in one canal, in which there were three arteries of equal dimensions, the duct was of about half the size of one artery. This case, therefore, does not establish an analogy between the biliary organs of the vertebrated and invertebrated animals; but, on the contrary, it shews that the class of monstrosities to which it belongs forms a much slighter deviation from the ordinary vertebrated type than was imagined. Nor does it militate against the conclusions maintained in this paper upon the physiology of the liver; although, as Mr. Mayo observed, it cannot be supposed that the arterial blood, in its passage through the vasa vasorum into the branches of the umbilical vein, underwent the usual change into venous blood; and it was still, he contended, arterial blood, though less pure in character, which was conveyed through venous canals into the secreting part of the liver.

A case, similar to Mr. Abernethy's, which was met with by the late Mr. Wilson, is mentioned by Mr. Lawrence and Dr. Monro. The history of this case was lately read at a meeting at the College of Physicians, by Dr. Wilson, to whom I am indebted for the following particulars:— The subject was a girl, thirteen years of age, who met with her death from an injury of the head. The vena portæ terminated in the inferior cava; there were two splenic veins, one of which entered the portal vein, and the other the cava, near the point where it becomes surrounded by the liver. Mr. Wilson says, "I could trace no vein passing into the liver at the cavity of the portæ; the remains of the umbilical vein were impervious; I traced them to the entrance of the portæ, *and now regret that I had not traced them sufficiently far to see with what set of vessels they were united*.....The hepatic artery," Mr. Wilson continues, "came off in a distinct trunk from the aorta, and ran directly to the liver; it was much larger than it usually is, but not so large as the trunk of the vena portarum; it entered the liver as usual. The gall-bladder had nothing remarkable in its appearance; it was of a size proportioned to that of the liver, and contained more than half an ounce of bright yellow fluid, similar in appearance to the bile; it was not, however, submitted to any other test but that of sight." The umbilical vein in this case was obliterated as far as it was traced by Mr. Wilson; but, as in Mr. Abernethy's case, its hepatic branches were doubtlessly open, and received the blood from the artery, which they conveyed to the coats of the secreting ducts. No portion of the liver was preserved.

[As there appeared to us to be some ambiguity in the remark appended to the explanation of Fig. 6, we applied to Mr. Kiernan, from whom we learn that the engraving is intended to represent what his examinations have led him to believe is the ultimate arrangement of the parts, although he has not yet been able actually to demonstrate it. We have also been re-

quested to correct a mistake which occurred in the paper as published in the Philosophical Transactions; the portal vein being therein represented as conveying blood to the coats of the *excreting* ducts, instead of the *secreting* ducts (p. 392, line 30, of our present number). The following remarks we have considered of so much practical importance as to deserve a separate place in our columns: in the original it appears simply as a note.—Ed. Gaz.]

METHOD OF INJECTING EMPLOYED BY MR. KIERNAN.

I for some time experienced great difficulty in making successful injections of the minute vessels of the liver; and this difficulty, arising from the presence of blood in the vessels, was increased when my object was to inject the two veins in the same organ, no exit being then left for the blood. Very little advantage is gained by previously injecting warm water, a large portion of which remaining in the vessels dilutes the injection and obstructs its course. The object is to obtain a free passage for the injection through the minute vessels; this can be accomplished only by tying the portal vein and hepatic artery in the living animal, and thus depriving the liver of all its blood. In one minute after the application of the ligature, the liver becomes bloodless, and the sufferings of the animal may be abridged, and regurgitation into the hepatic veins prevented, by dividing the inferior cava near its termination in the right auricle. Before injecting, the body of the animal should be left in water during twenty-four hours, a ligature having been previously placed on the inferior cava above the diaphragm, to prevent the entrance of the water into the hepatic veins. If the liver be previously prepared in this manner, all the intralobular hepatic veins may be injected with one colour, and all the interlobular portal veins with another, and the course and distribution of each set of vessels may be studied with facility. The various appearances produced by congestion of the liver may be imitated by injection. This method of injecting is equally applicable to every other organ. I made a very successful injection of the portal and hepatic veins in the exsanguine liver of a man who died from the rupture of an aneurism of the abdominal aorta, under the care of Dr. Hope, in the Marylebone Infirmary. In the preparations of this liver, as in those made by injecting the vessels after the ligature of the portal vein and hepatic artery in living animals, the central portions of the lobules are coloured with blue, and the marginal portions with red injection.

EFFICACY OF THE VAPOUR BATH IN CASES OF DIABETES.

To the Editor of the Medical Gazette.

Sir,

Dr. Lefevre's observations, published in the number of the Gazette for Dec. 6th, on the efficacy of the vapour bath in a case of diabetes, have brought to my recollection two instances of the same disease, in each of which I found the same remedy more useful than any other I had tried. If you think them worth publishing, they are at your service.—I remain, sir,

Your obedient servant,

Thos. Watson, M.D.

Henrietta-Street, Cavendish Square,
Dec. 3, 1834.

Archibald Jameson, aged 40, a chairmaker, living in the New Road, was admitted into the Middlesex Hospital on the 23d November, 1830.

He stated that he made an excessive quantity of clear urine, having a pale straw colour, and a sweet taste. He complained of considerable thirst; loss of flesh; debility; a constant sense of weakness in his loins, and of fatigue and aching in his thighs and legs; a feeling of heat in the epigastrium, with uneasiness there after meals; disturbed rest; and unusual peevishness and lowness of spirits.

His skin was dry and harsh; his tongue moist, and nearly clean; his gums were vascular and spongy, and some of his teeth loose. His bowels costive; his appetite was good, but not voracious; his pulse 84, and somewhat sharp.

He gave the following history of his illness:—

In the month of March he began to wonder at the uncommon quantity of water he made. Before that time the secretion had been abundant, but this he had attributed to the usual influence of cold weather upon him. The month of March, however, being fine and mild, he was surprised that the quantity voided did not diminish; and he was subsequently convinced that the disease was *then* affecting him, if not sooner. By the end of April his strength was fast declining; and in the beginning of May he consulted a physician, who desired him to taste his urine: he found it

was sweet. He was under this physician's care for five weeks, and in that period had eight blisters on his loins, with much relief to pain which he had suffered there, took a mixture of iodine and arsenic, restricted himself in a great measure to animal food, and got much better. An accidental wetting by rain at this time was followed by a relapse. Subsequently a dispensary physician was consulted, who also advised animal diet, and prescribed pills, containing two grains of the sulphate of quinine, one grain of the sulphate of zinc, and one-third of a grain of opium, thrice a day. From this plan he again derived much benefit; his urine diminished in quantity, and became less sweet; and he regained strength. About a month before he came to the hospital, he once more caught cold, and all his symptoms returned in nearly their former severity.

He was a married man, with several children. Since June he had noticed a total loss of virility. He had no uneasiness in any part of the urethra.

At the time of his admission he passed thirteen pints of urine in the twenty-four hours, and was disturbed three or four times in the night by micturition. The urine was pale, and contained a large quantity of albumen; and effervesced after standing a few hours, in consequence of the commencement of fermentation. Its specific gravity was 1036. The quantity of fluid drunk daily was nine pints. His thirst was great, but less urgent than during the summer months, when it was so tormenting, and his mouth and tongue were so parched and clammy that he could not refrain from drinking; and in order to avoid drinking to excess, he was at that time in the habit of wandering into the fields, where no water could be got.

He stated also, as matters which had attracted his own notice, that warm drinks "ran through him" more quickly than cold, and that acidity of the stomach, by which he was previously much troubled, had entirely disappeared since his present illness began.

During the preceding winter he had been several times wet through, and had neglected to change his clothes.

On the 24th his bowels were moved by castor oil. He made thirteen pints and a half of water.

A hot air, or vapour bath, had just been constructed in the hospital, and it afforded, I thought, a good opportunity for trying whether the suspended functions of the skin might not be restored, and the perverted functions of the kidneys perhaps corrected, by that powerful mode of exciting perspiration. The patient was put upon full diet, consisting chiefly, but not entirely, of animal substances; and he took five grains of Dover's powder three times a day, and occasional aperients.

On the 25th November he went into the hot air bath, and after a short time perspired freely. He had a better night than usual; lost the sense of weariness and aching in his legs; and the next day made only ten pints and a half of urine.

On the 26th the quantity again rose to thirteen and a half pints.

He used the bath a second time on the 28th. A longer period elapsed before perspiration was established. He felt exhausted on coming out of the bath; but soon found himself more comfortable, lively, and strong, than before its use. Next day the skin was more natural; and, for the first time since his illness, he perspired spontaneously, though slightly; urine nine pints. On the night of December 1st he perspired in bed; urine eight pints and a half.

It would be both tedious and useless to pursue the case in all its detail: it is sufficient to state that the employment of the sudatorium was continued twice a-week for some time, and the Dover's powder given as before; that under this treatment a striking improvement took place, in respect both to his sensations and to the quantity and quality of the urine secreted; and that after a little time he began to gain flesh and weight. At one period the quantity of urine was reduced to four pints in the twenty-four hours. Its proportion to the fluids taken underwent a marked decrease, as will appear from the following comparison. During the first ten days of his residence in the hospital, the quantity of urine averaged ten pints and a half—the quantity of fluids drunk, eight pints and a half; *i. e.* the urine exceeded the drink by two pints.

For the last ten days, the urine averaged six pints and a half, and the drink eight; *i. e.* the drink exceeded the urine by a pint and a half. The

specific gravity of the urine varied between 1031 and 1039.

At his admission he weighed 111 lbs. On the 27th December his weight had diminished to 108 lbs.; it then began gradually to increase, till, on the 20th April, 1831, it had reached 120 lbs.

The following interesting statement, drawn up by himself, before he left the hospital, gives a very good account both of the symptoms which had most distressed him, and of the degree of relief he had experienced.

"The urine is reduced more than one half, and does not contain much sweetness, but sometimes tastes salt, with a mixture of bitter. My stools, which were dry, and like balls packed together, are now quite natural. The pains in my limbs are entirely removed. My spirits, which were very much depressed, are now revived, and cheerful. The unpleasant aching of my kidneys, of which I spoke little, lest I should be cupped in the loins, is now removed; only I feel weak there. I am cured of the pain in my stomach, and the circuitous working of the wind in my bowels, which formed lumps in my belly as it passed, resembling those formed by the cramp. I have likewise got rid of the palpitation at my breast, which was accompanied with a sort of dread. My breathing is much improved; perspiration in a great measure restored; and my skin, which was dry, is now become moist. I sleep well at night, whereas I could not sleep more than two or three hours out of the twenty-four. My thirst, which was excessive, has ceased to be troublesome."

He became an out-patient on the 8th of March, 1831, and left off the bath on the 14th. He told me that he was no longer impotent; and that he sweated naturally and easily. After a while he declared himself well, and ceased to attend.

I was sorry to see him among the applicants for admission on the 2d of the following December. His complaint had returned; but he spoke principally of new symptoms—symptoms which are well known to occur in diabetic patients, and which Dr. Prout had predicted in this case, from the qualities of the urine formerly described;—symptoms, I mean, of pulmonary phthisis.

He told us that he had remained well till the day of the coronation of his present Majesty, the 8th September. On the evening of that day he took his children to see the display of fire-works in the Park, and got his feet wet. From that time he had cough. On the 1st of November he brought up, in successive mouthfuls, a pint of florid blood. The hæmoptysis continued, to a less extent, for some days, occurring two or three times a day.

He complained of some uneasiness on the right side of the chest, near the sternum. Percussion beneath the right collar-bone gave a dull sound, and pectoriloquy was distinctly audible in the same spot. The diabetic symptoms were not then severe, though they increased afterwards. He passed from four to five pints of urine daily; perspired occasionally; and did not suffer much from thirst. I now for the first time observed that his breath had a peculiar sweetish odour, much like that of an apple chamber.

I did not think it expedient to recur to the sudatorium; and instead of Dover's powder, I gave him a quarter of a grain of the acetate of morphia in solution every six hours. His case was now hopeless. On the 13th February, 1832, he was made, at his own request, an out-patient. On the 6th March he begged to be re-admitted; and on the 15th April he finally left the hospital.

I will insert here one or two further extracts from the hospital case-book, in illustration of the influence of certain ingesta upon the diabetic symptoms.

Throughout the greater part of his illness he had eaten with his meals a small quantity only of bread. Whenever this quantity was exceeded, though but a little, a sensible increase in the quantity and sweetness of the urine ensued. In March, 1832, being very uncomfortable, he abstained entirely from bread during two days, and, excepting one or two potatoes, from vegetable food of any kind. The quantity of urine fell immediately from ten to six pints; and from being very sweet, and clammy to the touch, it became (he said) bitter. His thirst almost ceased; he had much less aching in the limbs; and declared that he felt better than at any time during the preceding three months.

The acetate of morphia was gradually increased to half a grain every four hours. Twice, on his complaining of headache, drowsiness without sleep, and continual dreaming, I suspended this

medicine altogether. On each occasion its suspension was followed by a considerable increase of urine, great debility, and depression of spirits.

In the latter part of April 1832, his wife came to tell me he was much worse. I then saw him at his own house. He was breathing with difficulty, and in great distress. His tongue dry and parched, and of a brown-red colour. He died on the 30th, and the body was examined the next day. It exhaled an unpleasant mawkish odour, resembling that of his breath while alive.

In the upper part of the right lung was a cavity as big as a walnut; the rest of the lung was loaded with tubercles, and quite solid. There was a series of small cavities, all communicating with the bronchi, in the upper part of the left lung; they were filled with a slate-coloured matter. This lung was less diseased than the right; its lower lobe was tolerably free from tubercles.

The muscular parietes of the heart were flabby. The liver was pale and soft; perhaps enlarged. The kidneys were of a deep red colour without and within, but they had undergone no perceptible alteration of structure: Mr. Mayo, who saw them afterwards, thought them somewhat firmer than is usual.

The mucous membrane of the stomach and intestines was soft, but not remarkably vascular.

Wm. Patterson, aged 36, a wheelwright, admitted January 18, 1831. States that he voids from fourteen to sixteen pints of clear sweet urine in the twenty-four hours, and is obliged to rise four or five times in the night for that purpose. Complains of urgent thirst, pain in his loins, and aching in his limbs; constant dryness of the skin; occasional dimness of vision; and lassitude and inability to exert himself. There is a puffiness round his eyes, which makes him look as if he had been crying. Bowels habitually costive; tongue red, clean, somewhat glazed: it has been, he says, like a beefsteak, or like the pickled tongue of a bullock. Breath strongly saccharine; pulse 52.

Says that he has been ill twelve weeks; that the first change he noticed was the great quantity of water he made—more even than at present; that he has become progressively weaker and thinner; that his appetite is good, and has been ravenous; both he and his wife wondered that he should be ill and feeble, seeing that he ate and drank so heartily; that he used to sweat naturally und easily, but has not done so at all since his disorder began, although he has tried to procure perspiration by going into a warm (water) bath; that the sexual inclination is much diminished, but he is not altogether impotent; that he has had some irritation about the orifice of the urethra, and at one time slight cough and some expectoration, both of which have nearly ceased.

His urine has the same sweet smell as is so distinctly perceptible in his breath. Its specific gravity is 1045. He had been taking opium pills, and some other unknown medicines.

Encouraged by the beneficial effect of the hot-air bath upon Jameson, I employed it in the same manner in this case also, and with the same good consequences. The patient was allowed one pound of meat daily, and a quart of milk. He took castor-oil and other aperients occasionally, and small quantities of opium, which was tried in various forms: the acetate of morphia answered better than any other.

The use of the sudatorium was followed by free perspiration, with immediate relief to his feelings; by a remarkable diminution in the quantity of urine, which became at the same time less sweet and of lower specific gravity; and, at length, by increase of strength and weight. After some time, it was found that perspiration occurred spontaneously, and then the bath was discontinued. The disease, however, though mitigated and rendered tolerable, was obviously not removed. I never observed the specific gravity of the urine to be less than 1038. The quantity was reduced, for a short period, to four pints and a half; but the usual average was nine pints daily.

He left the hospital on the 9th of May. Two or three weeks afterwards, his brother came to beg that I would visit him. He had got up, two days previously, saying that he felt unusually well: soon afterwards, he was attacked with acute pain in the epigastrium, nausea, and copious vomiting. He had drunk largely of strong ale the day before, and more moderately for several days preceding. When I saw him he was moribund; had pain in the abdo-

men, a small rapid pulse, and sunk features. He died the next day.

The stomach was large, of a purple colour externally, at its splenic extremity, and marked there with large veins. At the corresponding part within, there was a circumscribed red patch, as big as the palm of one's hand, and covered with mucus, which was tinged with blood.

The kidneys were large, and their cortical portion was paler and more easily torn than usual. The increase of bulk seemed to belong exclusively to that portion. Several large bony deposits, of irregular shape, were met with in the mesentery, occupying the place of mesenteric glands. These deposits consisted of phosphate of lime, with a little carbonate of lime and animal matter.

The lungs were perfectly sound in structure, but loaded with frothy fluid. The heart was large, pale, and soft. The pericardium rough and granular internally.

UNSUCCESSFUL CASE OF LITHOTRITY.

To the Editor of the Medical Gazette.

Sir,

It may appear a trite observation to say, that in establishing the value of a newly-proposed remedy, or the comparative merits of different surgical operations, it is of the last importance that the unfavourable results, wherever such occur, should be as freely and impartially communicated to the profession, as those more fortunate events which appear to authorize a preference of the novel measures proposed. In no other manner can a just and permanent opinion of them be formed; and it is from the not unfrequent violation of so obvious a rule, that remedies and operations at one time loudly commended, have, subsequently, from the disappointment of practitioners, been altogether, and perhaps unjustly, discarded.

The new operation of lithotrity is one of those proceedings with which the medical public has not a very perfect acquaintance. No reasonable doubt can, I think, be entertained, that it is a decided simplification and improvement in practice; but the class of cases to which it is specially applicable has not been defined, nor are the occasional untoward consequences of the operation so familiar to medical men as it is desirable they should be*. If the various cases in which lithotrity has been, or may be, performed, were detailed from the commencement to their termination, a series of facts of considerable practical value would be obtained; nor could the pages of our medical periodicals be more fitly occupied, than in furnishing the grounds for correctly estimating the value of an operation of such great importance.

A case of urinary calculus in which lithotrity was performed, and which terminated fatally on the 12th day after the operation, has led to the preceding reflections; and, practically following them out, I feel it to be an imperative duty to detail the particulars of that case briefly, but explicitly, so as to enable practitioners, as far as I can, to form a correct judgment of the circumstances which induced the fatal result, and to estimate how far those circumstances affect the eligibility of the new operation.

September 8th, 1834.—Charles Elliott, æt. 64, a ribbon-weaver, of spare habit and pale complexion, applied to me for advice on account of severe pain in making water, followed by straining and prolapsus ani. The calls to evacuate the bladder occurred almost every hour during the day, and about every third hour during the night. The urine was rather high coloured, sometimes cloudy, and generally deposited a reddish sand.

He gave the following history of his symptoms:—About eleven months since he passed one or two small stones, about the size of half a pea, of a brick red colour. He had but little pain at the time, and none at all previously; in fact, he had before that been quite healthy, and subject to no complaint. About two months subsequently, after drinking beer with gin in it, he voided "black blood and water," as he expressed it, but without pain; and this hæmorrhage never recurred. From two to three months after the hæmorrhage, he began to have frequent calls to make water, accompanied with pain; and the

* "When a patient is cut for the stone, the operation puts life in danger; yet it is no protection against a return of the disease; and as often as it is repeated, so often does the patient risk his life. *Lithotrity, on the contrary, does not endanger life.*"—*King's Lithotrity and Lithotomy Compared*, p. 231.

urine was then thick, and had a gravelly deposit. The prolapsus ani commenced about three months since. Severe pain seizes him whilst making water; the flow of urine stops suddenly; then follow straining and prolapsus; and the prolapsus returns always with the pain.

His appetite is good; he has no thirst; the pulse is 75, regular, but rather weak; the tongue is moist, and but slightly furred; the bowels rather confined. He has no pain of the back, nor sickness, nor numbness of the thigh. His skin is never hot; he sleeps well, excepting that he is disturbed by the calls to empty the bladder. He was directed to take the caustic alkali, with mild aperients, and hyoscyamus at bedtime. These remedies afforded him some relief: but on the 22d he had a severe attack of dysenteric diarrhœa, a disease at that time prevalent in the neighbourhood. From this attack he was perfectly restored by the 29th, and was then sounded by Mr. Nankivell and Mr. Bicknell, who at once detected a stone. As the circumstances of the case appeared to us favourable for the operation of lithotrity, measures were immediately taken to obtain the valuable aid of Mr. Costello, who had very recently operated on a patient at Leamington. That gentleman promptly and most liberally proffered his services, and fixed the 17th of October for the operation. On that day, in the presence of between twenty and thirty medical gentlemen, Mr. Costello performed the operation with masterly skill and address. The stone was immediately detected and seized. The irritability of the bladder prevented the complete injection of that viscus, and much of the fluid was immediately and forcibly expelled. The stone appeared to be about an inch in diameter. It was seized and broken about seven times. A little blood escaped by the urethra during the operation, which occupied about 15 minutes. It was attended with but little pain. Some detritus came away with the instrument. The patient walked a distance of about three-quarters of a mile to the operation, and walked also about the room after it. He was conveyed home in a carriage, and had a warm-bath. On alighting from the carriage, so urgent was his desire to empty the bladder, that he made water before entering the house. Much sand, he said, came away at that time, which, of course, was not collected.

For the first three days after the operation, no unfavourable symptoms appeared, excepting that he was obliged to pass his urine more frequently during the night—namely, almost every hour. Sand continued to come away, together with two or three large angular fragments; and the urine, which, during the whole day after the operation, was tinged with blood, became cloudy, depositing a whitish, opaque, muco-purulent fluid. On the 21st he complained of chilliness and general soreness, which he attributed to having taken cold. He had a white tongue; the skin rather hot, but moist; with thirst and loss of appetite. The pulse did not exceed 80. He experienced a constant "gnawing" sensation, as he termed it, at the neck of the bladder, with an almost incessant desire to pass urine. He did not call it pain, nor had he the least pain elsewhere. On the 22d, the pulse, still not exceeding 80, became irregular; his strength visibly declined, and his appetite became worse. All his uneasiness continued to be referred to the neck of the bladder, which was so constant, that, if he fell asleep for a few moments, it speedily awoke him; so that, in fact, he scarcely got any sleep. Sand was passed for the first three or four days, after which no more appeared, but the white opaque fluid deposit every day increased in quantity, and became decidedly puriform. About the 24th the pulse suddenly rose to 130, and became still more irregular; but the other symptoms did not vary in any important degree. The tongue continued white, and was somewhat drier; he had complete anorexia, but no sickness. The skin continued rather hot, and always covered with moisture. His mind was composed, and unaffected with delirium. On the 29th, the day of his death, he answered questions correctly, but muttered to himself at times, as indeed he had done for the last two or three days. Unless questioned, he made no complaint. The pulse was rapid, and intermitting. He took gruel, or whatever other fluid was offered to him, and remained free from sickness or hiccup. The bowels had not been moved for the last two days, and during that time the urine had partly escaped unconsciously; what was caught contained much puriform deposit,

and was rather offensive. His feet became cold, the breathing laborious, the lips blue, and he expired at six o'clock in the evening. During his illness, after the operation, he always replied cheerfully to the questions addressed to him, and anticipated that he should recover.

Post-mortem inspection.—The body was opened twenty-four hours after death, by Mr. Nankivell and Mr. Bicknell. The abdomen only was examined. The peritoneum was healthy, and there was no effusion into its cavity. The kidneys, ureters, and bladder, were removed in connexion. In removing the left kidney, which was felt to be enlarged, purulent fluid escaped, and the ureter of that side was seen to be thickened. The right kidney was first examined: externally it was of healthy appearance, and of normal size; and when divided, nothing morbid was at first observable. On pressing the papillæ, some turbid puriform fluid escaped; and on closer examination, two or three depôts of pus, each of them not larger than a hemp-seed, were detected in the cortical substance*. In other respects the kidney appeared quite healthy; there was no other sign of inflammation, and the ureter of that side was of natural size and appearance. The left kidney was enlarged perhaps to the extent of one-third of its original size, and purulent deposits were conspicuous on the external surface. On dividing the kidney, these collections of pus were found scattered through its substance, the intermediate portions having, however, a not unhealthy appearance. The pelvis was healthy, but purulent fluid could be easily expressed from the papillæ. The left ureter was thickened in its whose course, and in slitting it up, the lower third was found to be very vascular throughout the whole textures, and more thickened than the superior portion. Towards the termination of the ureter in the bladder, it contained a calculus, which weighed four grains and a half; and from the vascularity of that part of the ureter, it appeared probable that the calculus had been impacted there for some time. On opening the bladder, we were surprised to find the mucous coat exhibit a perfectly healthy appearance, being pale, without inequality or softness, and not thickened. The cavity of the bladder was small; the muscular coat was hypertrophied generally. The substance of the prostate gland seemed rather vascular, but it was not enlarged. The bladder contained 10 fragments of calculus, but no sand or pus. These ten fragments weighed as follows:—

	Grains.
No. 1 (the largest) ..	110
2	40
3	20
4	10
5 to 10 inclusive .	15
	195=3iii. gr. xv.

The gravel collected at the operation, and subsequently, amounted to 45 grains, including a few fragments, one of which weighed five grains. Of course some was lost, in particular on the first occasion of making water after the operation, when the man said a considerable quantity escaped, which was not collected. If the quantity lost in this way be estimated at 15 grains, which I believe to be a fair estimate, then the portion of stone removed by the operation amounted to about one fourth of the whole calculus. Had the patient survived for any length of time, it is probable that the smaller fragments would have escaped, as all of them, six in number, weighed only 15 grains, and, as has been already stated, one fragment weighing 5 grains had been expelled, and with scarcely any pain, for the man had a capacious urethra. With this allowance, however, three or four repetitions of the operation would have been required to relieve him of the whole calculus. The calculus appeared of light specific gravity, the figure flattened oval, the surface granular. It consisted of concentric laminæ of a reddish or fawn colour, and was almost entirely soluble in caustic potash.

The circumstances which induced me to think that Elliott's case was a favourable one for lithotrity were, his former good state of health, and the comparatively short period during which he had been afflicted with symptoms of urinary calculus: hence the probable small size of the stone, and the absence of any indication of organic disease either in the kidney or bladder; for up to the day of the operation his appetite and digestion were good, and he was free from fever. Notwithstanding, however, these negative

* See Andral's Pathological Anatomy, ii. 625.

signs, it can scarcely be doubted, from a review of the whole facts of the case, that structural disease of the left kidney must have pre-existed for some time; and it is to the morbid condition of that viscus, roused into greater activity by the operation, that the fatal termination of the case must, I conceive, be ascribed. The enlargement of that kidney, the dissemination of numerous depôts of purulent matter throughout its substance, and the general thickening and enlargement of the ureter of that side, were morbid phenomena, not very likely to have been so fully developed within ten or twelve days. It appears to me most probable, that from the period of the hæmorrhage in the early part of the complaint, structural disease had been very slowly progressing; so gradually, indeed, and with so little constitutional disturbance, that it was easily masked by the irritation constantly present in the bladder. It may be objected to this view, that if the increased irritation in the bladder, consequent on the operation, were powerful enough to excite fatal disease in the kidney, it would surely have occasioned disease in the mucous coat of the bladder. But it is chiefly because no disease of the mucous coat of the bladder was thus developed, that I presume the kidney must have been previously in a morbid state, for without such previous disease the irritation in the bladder would certainly seem to have been far more likely to induce structural disorganization in that viscus than in the remoter organ. However, the facts are impartially stated, and the reader can form his own inferences, if he deem mine erroneous.

It would be unreasonable to attempt to draw extensive general deductions from an isolated case. This much, however, I may be excused for saying—that too strict a scrutiny cannot be exercised in inquiring into the existence of organic disease in the urinary organs previous to the operation of lithotrity; and inasmuch as such organic diseases are less common in early life than in more advanced age, lithotrity will probably be attended with greater success in the young than in the old, as it certainly will be in the earlier periods of the disease whilst the calculus is small.

I am, sir,
Your obedient servant,
R. Arrowsmith, M.D.

Coventry, December 10th, 1834.

SIR C. BELL'S DISCOVERY OF THE DECUSSATION OF THE POSTERIOR PYRAMIDS.

To the Editor of the Medical Gazette.

Sir,

In a paper by Sir Charles Bell, published in the second part of the Philosophical Transactions for the present year, a statement is made, which, if it were true, would be not less curious than novel. Sir Charles Bell states that the inner and posterior fasciculi of the upper part of the spinal marrow partially decussate each other in a manner bearing some correspondence with the decussation at the origin of the *anterior* pyramids. The following are the words employed by Sir Charles:—"We may now survey the extent of the fourth ventricle. On each side of the calamus scriptorius are two pyramidal columns. To trace these upwards we must cut into the iter ad tertium ventriculum by dividing the corpora quadrigemina, and then we can trace them up into the thalami nervorum opticorum. By a section we may trace them into that body, and then diverging into the hemispheres of the cerebrum. Having followed these columns upwards, *we next trace them downwards, and find that they join, intermingle, and decussate, and again separate* and proceed down the spinal marrow*." Now to this point of anatomy I have repeatedly given my attention on former occasions, and I have again looked to it carefully since reading Sir Charles Bell's statement. I profess that I do not see, nor ever have seen, any thing like the decussation which he describes: I believe, therefore, that it does not exist: and as the point is one of great pathological interest, I take this opportunity of communicating to your medical readers the result of my observations upon it. I have always found the inner and posterior fasciculi of the spinal cord—those, namely, which approaching the fourth ventricle obtain the name of posterior pyramids—to be simply laid in apposition, and to be totally exempt from decussation.

Sir Charles Bell, as I gather from his essay, was led to observe this supposed decussation by wishing to find

* Phil. Trans., 1834, p. 476.

a channel, through which the crossing over of loss of sensation, in hemiplegia, to the opposite side of the body, might be supposed to take place,—resembling the channel for the passing over of muscular palsy, *for which alone* he thinks the decussation of the anterior pyramids would serve. He need not, however, have gone so far for such a channel. There is a point in the anatomy of the anterior pyramids with which he is evidently unacquainted, that accounts sufficiently for the pathological phenomenon. The lower terminal fasciculi of each of the anterior pyramids are not continued into the *anterior* fasciculi of the opposite half of the spinal marrow, *but plunge into its centre*, and therefore should be expected, *if they are the route of the decussation of symptoms*, to cause the loss of sensation in the parts supplied by the spinal nerves, no less than the loss of motion.

Sir Charles Bell, in plate xx. attached to the paper, fig. *a*, letters B, C, gives a representation of the decussation, in the existence of which I disbelieve.

In plate xix. a front view of the medulla oblongata and parts adjacent is given. The spinal accessory nerves are *represented* in it as arising from the anterior and lateral aspects of the spinal marrow: their real origins, are, however, from the posterior surface of the spinal marrow, and in this view the origins of both could not by possibility be seen.—I am, sir,

Your obedient servant,
HERBERT MAYO.

19, George Street, Hanover Square,
Dec. 16, 1834.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

Elements of Materia Medica and Therapeutics; including the recent Discoveries and Analyses of Medicines. By ANTHONY TODD THOMSON, M.D. F.L.S. and G.S., Professor of Materia Medica and Therapeutics, and of Medical Jurisprudence, in the University of London, Member of the Royal College of Physicians, &c. &c.

THIS book is not at all what it ought to be. The situation which the author holds, as lecturer in a great school, naturally led us to expect that we should find a work, professedly upon his own peculiar subject, superior to the crude productions which are merely got up for sale—more comprehensive in its views, and more accurate in its details. But in these particulars we find it very lamentably deficient; in fact, of the numerous manuals of Materia Medica which have of late years been published, it is decidedly the most incorrect which has fallen under our notice. This cannot fail to strike our readers as a very strong opinion to express; and it may at first sight appear to be a prejudiced one, when applied to a work on the same subject, and by the same author, as the London Dispensatory. We can only say, that we opened the volumes nothing doubting that we should have to bestow on them our hearty commendation; but the marks of haste and carelessness, to say nothing of doctrines positively erroneous, which crowded upon us, soon proved that our favourable anticipations had been misplaced. Upon reflecting on the cause of this anomaly—namely, that of the same author producing two books on the same subject, one good and the other bad, the only rational explanation which has suggested itself is, that the former was a mere compilation, in strict imitation—almost, or altogether, amounting to a copy—of the late Dr. Duncan's Edinburgh Dispensatory, which preceded it, while the latter is an original work, in which scientific arrangement and therapeutic reasoning are attempted,—and, as it appears to us, not always attempted with success.

In some respects, certainly, the design of the work is good, for we have no treatise on materia medica in the English language in which the object of classing remedies, and explaining the *rationale* of their action, has been satisfactorily accomplished; for although Dr. Murray's arrangement may be regarded as upon the whole the best, yet is it very far from perfect; while his account of the medicinal agents is rendered every day more and more imperfect by the advances of medical science. Dr. Thomson's classification is compounded partly of Dr. Murray's and partly of Dr. Young's, the whole range of remedial means being reduced to vital, chemical, and mechanical agents—the only novelty consisting in certain omissions and certain alterations of position with respect to individual remedies. With these changes we have no fault to find, for in

truth we consider them very unimportant, looking principally to the account which is given of the history and operation of medicines, and but little to their mere place in the arrangement.

Keeping the volume on our table for reference, as occasion might require, we were much struck with the loose nature of the reasoning often adopted, and have been in the habit of making marginal notes at the moment:—of these we shall give a specimen or two, by way of illustration.

We find, at page 506 (vol. i.), that a smaller dose of opium is required in summer than in winter—a position which we do not dispute. But then comes the rationale. "Hecquet explains this influence of temperature by saying, that as heat favours the flow of sweat, the opium is carried off by it, and is thus prevented from materially affecting the brain: but Chavret, with more probability, supposes that, as copious sweating diminishes the mass of the circulating fluids, and renders the cerebral compression less powerful, the sweating may be regarded as a favourable crisis, which guarantees the brain from over compression. Both opinions are hypothetical: and it is more likely to depend on the greater irritability of the habit in summer than in the winter, and the consequent greater susceptibility of impression." Now here is a curious specimen of the author's logic: he states a proposition, for the proof of which two authorities are quoted—the which authorities go to prove *just the reverse* of what is intended; thus—Opium requires to be given in a smaller dose in warm weather; but Hecquet and Chavret maintain that increased perspiration carries off the opium, so that it affects the brain less in warm weather than in cold; therefore—what?—according to Dr. Thomson, because opium affects the brain less—*therefore* a *smaller* quantity is required to produce a given effect!

Again, it is intended to shew that the imagination has great influence over the operation of drugs; and to illustrate this the following anecdote is related:—

"A student who was labouring under fever, and was attended by Dr. Gregory, required the administration of an anodyne to procure sleep. He was informed by the Doctor that he would order an opiate for him to be taken at bed-time. The patient, however, from not hearing well, misunderstood the term, and supposed that he was to take a purgative. Next morning, accordingly, when the Doctor visited his patient, he inquired what his anodyne had done for him? 'Anodyne,' replied the astonished patient, 'I understood it was a purgative, and a very active one it has proved. I have had four copious stools, and feel myself much relieved.'" But we submit that this might with much more propriety have been regarded as resulting from some accidental cause, or have been adduced to exemplify the peculiarities of *idiosyncracy;* and certainly the fact of opium occasionally purging is too well established to admit of it being attributable merely to the effect of imagination.

Connected with sedatives, we have some observations on blood-letting; and among others the following very extraordinary principle is laid down. Speaking of *active* hæmorrhages, we are told —"during the flowing of the hæmorrhage, although blood-letting be often resorted to, it is obviously unnecessary, as the hæmorrhage will cease as soon as the quantity of blood lost brings down the plethoric state which induced it!" So that, according to Dr. Thomson, if we have a patient with a hot skin and a sharp pulse spitting up blood, we are to put the lancet in our pocket, and comfort ourselves with the very satisfactory assurance, that the bleeding from the lung "will cease as soon as the quantity of blood lost brings down the plethoric state which induced it." This passage will be found as above at page 467 of volume first, and requires no comment to shew its dangerous tendency—particularly in a work addressed to students.

Speaking of local depletions, the old story of making leeches draw blood *ad infinitum*, by cutting them across, is reiterated with the utmost gravity, and apparently with the most undoubting faith,—reminding us of Munchausen's horse, which was curtailed at the "nether bulk" while in the act of drinking, and would have drank on till this day had not the Baron luckily looked round, and seen that the water flowed out at one end as fast as it flowed in at the other! Not only, however, does our author never once doubt the fact, but he proceeds to explain to us that the dropping off of the leech, when gorged with blood, depends upon its respiration being interrupted; but when we "snip off their tails" they cannot

become so filled as to impede their breathing, and therefore they continue to suck. Now, unluckily for this doctrine, it happens that the leech will live for days immersed in oil; nay, it will live for an equal time in the vacuum of an air-pump: so much for the *explanation*. As to the rest, we can only admire the partiality of Dr. Thomson for an old wives' tale. Can he be ignorant of Cloquet's demonstration, utterly exploding the *false fact* of the sucking of leeches being perpetuated by their curtailment?

Taking just the opposite class of remedies, namely, stimulants, we have a considerable mass of information regarding them accumulated together, but in a form so crude and ill-arranged, as to make us lament the evident haste with which they have been thrown together. On the subject of wine we have some little display of learning, picked up from Dr. Henderson and other writers. Noah, we are told, was a husbandman, and planted a vineyard, "and he drank the wine, and was drunken;" on which Dr. Thomson makes the sagacious observation, that "to the present time the best wine is that of the grape," which, although very true as a fact, is, at least, rather singular as an inference from the scriptural narrative. The announcement, however, which follows is important—namely, that "cider, *beer*, and mead, are as much *wines* as that which is made from the grape." As this is the case, we advise the Doctor, next time he has any of the "Faculty of Physic" at dinner, to entertain them with a few bottles of *beer:* we doubt much if they will fall into the predicament of Noah, although, according to our author, they will have "as much wine" as he had. Another very queer assertion connected with spirituous stimulants is, that he says Galen recommended "BRANDY and water in small, but frequently-repeated doses, in diseased appetite." We should be exceedingly obliged to Dr. Thomson if he would favour us, in his next edition, with the original passage which he has thus rendered. And this leads us, *en passant*, to notice another questionable, or rather an unquestionably erroneous, opinion of the Doctor's, namely, that "wine should be taken *before* dinner, or at some period of the day when chymification is not in progress,"—an opinion, he adds, which, "if it be correct as far as regards the healthy, is much more so as far as the dyspeptic are concerned." Now we hold the fact to be just the reverse of this, namely, that many persons not usually troubled with dyspepsia have acidity and other unpleasant symptoms brought on every time they take a glass of wine *before* dinner, although they can take it during or *after* dinner with impunity; and that this is remarkably the case with those of delicate stomach, who, indeed, can very seldom bear wine in the forenoon without an aggravation of their sufferings.

The dose of some medicines is made unnecessarily small, and others are recommended to be given in quantities perilously large. Thus we are told (p. 714), in giving nitrate of silver, not to begin with more than one-sixth of a grain, which is only one-third of what the most cautious may prudently venture upon; and again, in "hæmorrhagic affections" prussic acid is recommended in doses of ℥iij.—*rapidly increased to* ℥xij.! Now we do not mean to say that ℥xij. of prussic acid may not have been given for a dose with impunity; but we are quite sure that, in a work addressed to beginners, it is imprudent to give such a range, or to use so loose an expression.

In other instances, no mention is made of important preparations of medicines in general use. Thus, we were desirous to see what opinion the learned Professor entertained of the acetic extract of colchicum, so frequently employed and so much recommended in the paper on Gout, published some years ago by Sir H. Halford. What was our astonishment to find that no mention whatever was made of it, and that the author did not seem even aware of its existence!

But what shall we say of the account of sulphuric acid? We are told that this, "in its diluted state, consists of a fluid ounce and a half of the strong acid, and *four* fluid ounces and a half of distilled water; thence, each fluid drachm contains *ten* minims of the strong acid." Now, there are here two points to be noticed—1st, A mis-statement, and a serious one, putting the proportions as 1 to 3, when they ought to be of 1 to $9\frac{2}{3}$; and, 2dly, a gross error. Even supposing that Dr. T. had stated *fourteen* instead of four, as the just proportion of water used in forming the London dilute acid, it is still *not the fact* that there are 10 minims of real acid in every drachm. But we think we know how the error has originated. Dr.

Thomson first made a blunder in his Dispensatory (see even the latest edition), where he says that there are 80 grains of real acid in every fluid ounce of dilute S. acid,—whereas the fact is, that there are but 48, or 10 per cent. In the Elements, however, the blunder is duly repeated in an improved form.

But it is in vain to descend to mere inaccuracies; for, though two lists of errata for the 1st volume appear, (viz. one in it, and another in the 2nd vol.) yet errors, almost without number, remain unnoticed, and sometimes it is difficult to suppose they rest altogether with the printer: thus guaiacum is incidentally mentioned several times in the first volume, and on each occasion (p. 70 and p. 109, *bis*, &c.) is spelt *guiaicum;* but it is fair to add, that in the second volume, where the drug is professedly treated of, it is spelt correctly. In page 98, we have d*y*cotyledons for d*i*cotyledons, and carvi for carui; p. 117, stram*m*onium for stramonium, and hyoscia*m*us for hyosc*y*amus: we also find menyanth*i*s for menyanthes; an*e*themis for anthemis; and *impos*thotonos for emprosthotonos. But, indeed, there is scarcely any instance in which a Greek word is given without an error: thus we find (p. 137) κλωρος for χλωρος; p. 420, ξανόις for κυανος; and p. 527, two Greek words are fused into one, so as to make υπνοτικονμηκωνιον instead of υπνοτικον μηκωνιον. Neither is the Latin of the "Elements" much better: a quotation from Buchanan's History of Scotland is made to run as follows:—"Vis fructui radici ac maxime semini somnifera, et quæ in amentiam si largius sumantur;" which we would defy Dr. Thomson or any other man to translate. But if we go on and take in the important word that follows in the original—"*agat*"—the case is altered. The Doctor, however, thinks its omission of no consequence, and leaves the reader to exercise his ingenuity by guessing at the meaning. Gregory is made to speak of "scænæ novæ et amoenæ," instead of "scenæ novæ et amœnæ;" and the classical Heberden fares little better, as he (p. 456, vol. ii.) has a most barbarous word put into his mouth: thus, "radix hellebori nigri *facultatum* movendi menstrua sibi vindicavit." Certainly these may be only typographical errors, but the circumstances under which they occur are—unfortunate.

Excepting the last quotation, we have limited ourselves exclusively to the first volume, and although we have by no means exhausted our list, we are yet indisposed to proceed farther in so ungracious a task, much less have we either space or inclination to enter upon the second. Only one point more shall we refer to. It is not in the learned languages alone that mistakes occur; the English of our author is frequently, to say the least of it, very inelegant; as, however, we are not very fastidious in such matters, we should have made no remark on this head, but that we really cannot stomach the action of his emetics: they produce most wonderful effects: thus, "persons of torpid habits are more difficult *to vomit* by emetics than those of irritable habits;" the former, we suppose, clinging to the mucous membrane like dough —while the latter are more diffusible: and, again, "women in general are more readily *vomited* than men!" We thought, when we last week published the history of Demetrius Stamatelli, who ejected a *fœtus* from the stomach, that we were recording rather a remarkable event, but it is a mere trifle compared to vomiting *full-grown men and women*, in the manner described by Dr. Thomson.

To be serious, we must end as we began, by declaring that the work is not what it ought to have been; and as the second volume was published last year, and both have been puffed in some of the journals, we have no doubt of the first impression being now nearly sold, and a second edition preparing: we have therefore thought it a duty to the medical public to make such remarks as, we conceive, will induce the author, for his own sake, and for the sake of the institution with which he is connected, to have these same lectures (for such they obviously are) very carefully revised, ere they be again presented to the public.

MEDICAL GAZETTE.

Saturday, December 20, 1834.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

INQUEST IN A CASE OF CHILD-MURDER.

THE inquest held at Hornsey, in the course of the week, calls for a few re-

marks. The principal parties against whom a verdict of wilful murder has been returned are foreigners,—a M. Chabassier and his wife, who, having effected their purpose, have fled to the continent. Some of the particulars may be related.

On the 4th of October last, Mde. C. was delivered of an infant, full grown, and healthy. There was no want of due provision for the birth; but an attempt to pass the child off on the accoucheur as one of six months' having failed (the parties, we should observe, have been married only since April), a course of ill-treatment was systematically adopted towards the infant, under which it ultimately perished. With a view evidently to mystify the circumstances, the lodgings were changed two or three times during the month. The child was seen alive, but sickly, on the 25th of October; and on the 28th it was observed that Madame Chabassier and her attendant went out of doors, the latter carrying a bundle. From the evidence, we gather that they proceeded to the sexton of Hampstead parish, and easily negotiated with him for a coffin and burial for an infant which they represented as having been still-born. No bundle was noticed on their return; nor was the child any more seen alive. The Chabassiers quitted their residence two days afterwards, and it appears have since left the country.

In consequence of suspicions which were raised, and which led to active investigations on the part of the officers of police, the place of burial was at length discovered, and on the 9th of December the body of the infant was exhumed in Hampstead church-yard. On the day following it was examined medico-legally by Mr. Shaw, surgeon, of Hampstead, who noticed the state of decomposition of the body, and the appearance of an indentation round the neck. The infant, he considered, was full-grown, and had lived from a fortnight to three weeks; but he could say nothing decisive as to the cause of the child's death. The contents of the stomach he would not undertake to analyse, but sent them for the purpose to the professor of *chemistry* (not of medical jurisprudence), in the Gower-street school.

At the adjourned inquest, a letter from the professor of chemistry, Dr. Turner, was read, in which it was stated that that gentleman had committed the task of analysing the contents of the stomach to *his assistant*, "who had been unable to obtain any certain indications of corrosive poison, such as vitriolic or oxalic acid, or of arsenic, as the quantity used would necessarily (?) have been so minute, that at that late period it would be impossible to decide. As to opium, the small quantity required to cause death in an infant would preclude his positively saying whether it had or had not been used."

After consulting together for an hour, the jury brought in their verdict of murder, grounded, we presume, altogether on the circumstantial evidence,—for nothing certainly was elicited either from the surgeon or the chemist's assistant to warrant such a conclusion. Were it not that we compared the reports given in different newspapers, in order to procure the most trustworthy account of the medical proceedings at the inquest, we should have rejected them wholly as apocryphal. But be the facts as they may, we cannot help adverting to the odd manner in which the negative toxicological testimony was obtained. First, the medico-legal referee—the parish surgeon, we suppose—called upon by the coroner to speak whether there was poison in the case or not, declines the weighty task; and with a modest, or at least a tacit admission of his incompetency, informs the jury that *he* (by what authority?)

had forwarded the matter found in the stomach to Dr. Turner. The Doctor takes care to save himself from any unnecessary trouble, throws the job into the hands of his assistant, and merely writes a letter, in which he says that nothing could be found. We will not stop to criticise Dr. Turner's note, of which we suppose we have the substance in the passage above quoted—a passage which contains no *chemical* information (all that was sought from the writer), and the toxicology of which is highly questionable—at all events, considerably irrelevant. The entire proceeding, however, shews in how very defective a state is the organization of legal medicine among us, and how anomalous the condition of our medical police; when a parish surgeon cannot apply the requisite tests for poison, but may, on his own responsibility, commit the investigation to a chemist, who devolves the duty upon his assistant, with whom the matter ends—in nothing.

Another gross defect in our system is exhibited in this case, by the transactions relative to the burial of the infant. It is left, it appears, wholly to the discretion of the sexton to bury all children said to be still-born, and that without any registry of the facts; there is no examination nor inquiry, especially if the applicants pay the necessary fees, and be respectable in their appearance (Mde. Chabassier, the sexton said, was "of very lady-like manners;") in such circumstances a child above three weeks old may be readily passed off for one dead-born. With such a convenience as this at the parish church-yard, there can be no doubt but that child-strangling is far more frequent than is commonly supposed; the only wonder to us is that it is ever in any instance found out. In the present case we cannot help thinking, that had not the Chabassiers been foreigners, and gone awkwardly about the business, they might have escaped even without suspicion. "There is no register kept of the burial of still-born children," said the Hampstead sexton in his evidence; "nor," he should have added, "is there any inspection made of those so described." We have often had occasion to allude to the gross irregularity with which the registration of burials in this country is conducted; each sect that has its own burying-ground keeping registers of its own, and there being no general registration of *deaths:* but any thing so lax as this permission, on the part of the parochial authorities, to bury new-born babes, or those announced as such, without comment or inquiry, was, we confess, far beyond our calculation.

The reason for omitting to register still-born children, if there be a reason for it, and could it be known, is, we suspect, rather an amusing one; our grave parish functionaries thinking, most probably, that a birth and a death occurring together neutralize each other, and ought not to be reckoned. Little are they aware (in this peculiarity, indeed, they have many to keep them in countenance among their more sagacious neighbours), that a note of the children still-born would prove both important and valuable in forming an estimate of the general mortality of the country. By an attention to the returns of this sort made in Flanders, M. Quetelet has been enabled to arrive at some conclusions highly interesting in a physiological as well as a statistical point of view. For example, he has ascertained that the number of the still-born throughout Belgium, is to that of other births, in the ratio of 1 to 31, and that the number of still-births in *towns* is double that which occurs in the country parts,—a conclusion which as nearly as possible agrees with the results obtained by Dr. Buck, at Hamburgh. Nay, the *sexes* of the still-born are registered in the Belgic states; and from a comparison of these, it ap-

pears that the mortality among male fœtuses is to that among female, as 3 to 2. Surely it is sufficient, even in the present humble condition of statistical research in this country, to mention these few instances, in order that the utility of such returns should be at once recognized and appreciated.

But to return, for we find we have rather diverged in our remarks from the point which at first induced us to take up this subject of child-murder. Our purpose, however, it will be perceived, was not so much to deplore the crime that has been committed, as to lament the imperfect means adopted for its detection — and the utter absence of measures such as might have operated towards its prevention. While such an imperfect state of things is permitted to subsist amongst us, we cannot but become more and more callous every day to the perpetration of similar offences, for their frequency must divest them of the power of exciting surprise. Is there no remedy? We think that to a certain extent there is, in the plan that has been suggested—namely, the enlisting in the service of the state a class of well-qualified medical men, both in town and country, to act as competent referees on all medico-legal questions; not, as at present, leaving the coroner and his jury at the mercy of every chance candidate for notoriety, or, at best, of a class of practitioners whose limited education but scantily prepares them for such vitally important investigations. Even as we now write, an example presents itself to us which may serve to place in a stronger light what we say. The newspapers contain an account of an inquest, held only yesterday, in another case of infanticide. In proof of the mortal injury done to the child, the medical man who gave his evidence said he was *sure* the infant had come into the world alive, and had breathed—though upon what grounds he was sure appeareth not: perhaps, however, the sort of proof which satisfied his mind may be guessed from the following singular question and answer:—

"Coroner.—Does not *the appearance of the blood* which has escaped since the *post-mortem* examination indicate the child to have been born alive?

"Medical Witness.—*Certainly;* it is *quite evident* the child was born alive!"

There is a specimen of the sort of evidence not unfrequently tendered and accepted at coroners' inquests, *even in the metropolis!* Need we add a word more to enforce the necessity of some new arrangement similar to that just proposed?

As to the propriety of establishing some better system of medical police and registration,—regarding that, we are less solicitous; for the matter will, we doubt not, find its remedy in no very remote session of parliament. The organization of the decennial censuses, so steadily conducted since the commencement of the present century, has already done much good, and will do much more by the practical example thus afforded of the value of statistical information. Add, moreover, the impulse given to such inquiries by the indefatigable philosophers of Belgium and France, and we cannot be too sanguine in expecting positive benefits to arise from this source at no very distant period.

PATHOLOGICAL LECTURES,

Delivered in King's College, London,

BY

Professor Mayo, F.R.S. &c.
Surgeon to the Middlesex Hospital.

VII.—*On Diseases of Joints.*—[Diarthroses.]

Diarthroses are those joints in which there is discontinuity. The ends of the bones articulated by diarthrosis are crusted with cartilage, and held together by a capsular ligament, a shut sac of synovial

membrane being reflected over, or lining, the articular cartilages and capsular membrane. The articular cavities of several of these joints are further deepened, or their shape somehow modified, by the introduction of a margin, or interposed plate, of fibro-cartilage. The tissues, therefore, which enter into the construction of diarthroses, are bone, cartilage, synovial membrane, ligament, fibro-cartilage.

1. The habitudes of bone under disease have been already described; but it may be desirable that I should re-enumerate those affections of the osseous tissue, which are directly concerned in the diseases of joints.

The bones, or parts of bones, which go to form diarthroses, are the extremities of the cylindrical bones, the round bones of the wrist and instep, the articular processes of the vertebræ, the condyles of the occipital bone, and of the lower jaw, the scapulæ, ossa innominata, and heads of the ribs, with the edges of the dorsal vertebræ. The affections of these bones, in which the joints are implicated, are the following:—

a, Restorative action after fracture.

b, Atrophy.

c, Eburnation, or the solidifying into a texture like ivory. In connexion with joint diseases, this change occasionally supervenes in surfaces of bones from which the articular cartilage has been absorbed. The ends of bones which have become eburneous on their surface, are often enlarged; the eburnation, however, extends to no greater depth than from two to four or five lines. This ivory bone resembles exactly the dense osseous texture which forms the large and *malignant exostoses.*

d, Inflammation, producing as consequences—in the articular ends of the long bones, consolidation, and abscess, which may open into the neighbouring joint—in each of the kinds of bones specified, softening, with high vascularity of the surface of the bone in contact with the articular cartilage—in each kind again, softening, with gelatinous deposit in the cancelli.

e, Deposit of tuberculous matter in the cancelli.

2. The changes which have been observed in articular cartilages are the following:—

a, Cartilage is susceptible of reparation. In oblique fractures of the extremities of the long bones, and in the fractures of several other bones, the articular cartilages are broken, or ruptured. In a simple fracture thus extending into a diarthrosis, as the bone unites, so does the cartilage: the rent surfaces are found to adhere together by a layer of effused lymph; at the same time the sharp edge of the cartilage becomes a little rounded by absorption, presenting an appearance not unlike the rounding which gradually supervenes of the sharp external edge of a fracture of a cranial bone. Whether the uniting medium finally becomes cartilaginous is unknown to me. The rounding of projecting edges, and deposit of lymph, are sometimes met with, constituting reparatory processes, after ulceration of cartilage has been arrested: the former occurring when the ulceration has removed a part of the thickness of the cartilage only; the latter, when the whole thickness has been removed. The same deposit of lymph is the medium of union in anchylosis, or when a joint becomes fixed after ulcerative disease. Anchylosis is osseous, cartilaginous, or mixed, according as the surfaces which are glued together are, both bone, or both cartilage, or one of each.

b, Cartilage is susceptible of two forms of softening; one I believe to be true atrophy. The appearance I allude to is often met with on the cartilage of the patella, in the bodies of persons a little advanced in years. The cartilage is softened, and seems split into soft thick villi. The change is accompanied both by partial absorption of the cartilage, and by a growth of the ends of the isolated villi in delicate shreddy productions, to which the synovial membrane probably contributes. This condition of cartilage deserves to be viewed, not as disease, but as natural degeneration of tissue.

c, The second form of softening is of rare occurrence; in it the cartilage becomes semi-transparent and gelatinous. In a case of severe inflammatory disease of the knee-joint, with caries of the articular surfaces of the bones, and inflammation of the synovial membrane, I found near the crucial ligaments, for the extent a sixpence would cover, the synovial aspect of the cartilage on the inner condyloïd cavity of the tibia softened and semi-transparent, for two-thirds of its thickness.

d, Cartilage is susceptible of three varieties of ulcerative disease.

In the first, the cartilage disappears very rapidly, the absorption beginning upon the synovial aspect, leaving a surface perfectly healthy and smooth, either of cartilage or of bone. This change supervenes with great rapidity after compound dislocations, when the cavity of a joint remains exposed.

In the second, the process of absorption is slower, and produces an irregularly excavated and ulcerated surface, on the synovial aspect. This condition of cartilage is a very common element in chronic articular disease. I believe it to be generally, if not always, preceded by synovial inflammation.

In the third, the process of absorption

commences on the aspect of the cartilage towards the bone. I believe that this kind is essentially dependent upon inflammation of the articular aspect of the bone. The absorption takes place with two effects: either that of thinning the cartilage, leaving the synovial surface perfect; or else the cartilage becoming detached, by the absorption of the layer nearest the bone.

e, I am inclined to suppose that cartilage is susceptible of inflammation, or of some change analogous to it. In one preparation in our museum, injected vessels are seen to pass from the bone through the cartilage to its synovial aspect; and one of these distinctly anastomoses with a vessel on the inflamed synovial membrane covering the cartilage.

f, The gouty concretion, the principal ingredient of which is lithate of soda, is met with in cartilage.

3. Synovial membrane is liable to many changes.

a, It unites readily when torn or divided.

b, It is highly susceptible of inflammation. When inflamed, where it lines the capsular synovial membrane, or covers bone, it is liable to become thickened by an effusion of lymph upon its surface, resembling a growth of granulations,—at first soft and vascular, afterwards hard and gristly: where it is reflected over cartilage, it is liable to become slightly thickened, opaque, easily separable from the cartilage, elastic and brittle. I have once seen it for a small extent thickened, firm, white, and soft, on the patella, in connexion with sensible vascularity elsewhere on the patella and semi-lunar cartilages. The fluids found in inflamed synovial membranes, are, synovia scarcely changed, but in increased quantity—synovia thick, brown, and turbid—synovia blended with pus,—pus,—lymph.

c, The synovial membrane sometimes undergoes a very peculiar alteration of structure. Within its texture, or immediately without it, a growth of substance takes place, of a pulpy consistence, of a light brown colour, intersected by white membranous lines, and with red spots, formed by small vessels injected with their own blood. This formation, which attains a thickness of a quarter to half an inch, grows from any and every part of the membrane indifferently.

d, The synovial membrane is liable to be the seat of gouty concretion.

4. Ligament exhibits the following changes:—

a, It unites readily when divided or ruptured, the process being exactly analogous to that of the reparation of bone.

b, It is liable to atrophy. Through disuse ligaments become weaker, and are liable to become elongated.

c, Ligament is susceptible of inflammation. I cannot, indeed, say that I have seen, after death, inflamed ligament; but in rheumatism, gout, and syphilis, it is impossible to doubt the existence of inflammation of this tissue. In joints, of which the other tissues have been the seat of inflammation and ulceration, the ligaments are found softened, slightly transparent, and tear readily.

d, The gouty concretion is met with in ligament.

In taking a rough practical view of the pathology of joints, the following classification of the affections of synarthroses suggests itself: they may be arranged thus—First, consequences of injuries attended with more or less rupture, or laceration, of the constituents of a joint; secondly, inflammations affecting more than one joint, and depending upon a specific or general disturbance of the constitution; thirdly, inflammation of the synovial membrane of a joint, proceeding commonly from a slight and neglected injury, or cold, and leading to thickening of the membrane, and increased, and more or less altered, secretion of synovia; fourthly, acute inflammation, leading to suppuration in the joint, with ulceration of the synovial membrane; fifthly, inflammation of the synovial membrane, leading to acute ulceration of cartilage; sixthly, inflammation of the synovial membrane, not attended with thickening or effusion, but leading to slow excavated ulceration of the synovial aspect of the articular cartilage; seventhly, inflammation of the synovial membrane, with inflammation of the articular aspect of the bone, attended with ulceration of the cartilage upon both aspects, but principally upon that towards the bone; eighthly, ulceration of cartilage, with inflammation of the synovial membrane proceeding from scrofulous inflammation or caries of the adjacent bone; ninthly, morbid growth of the synovial membrane; tenthly, foreign bodies in the joints.

a. The process of reparation after a strain, or partial rupture of the ligaments and synovial membrane, the integuments remaining entire, is simple and direct, supposing the part to be maintained in a state of quietude. Even when the synovial cavity of a joint is laid open, by a wound through the integuments, as in the extraction of loose cartilages, the process of reparation generally presents the same character—the wound of the integument uniting by adhesion. When a joint is opened, while the synovial membrane is

slightly inflamed, the restoration may be simple and direct. I saw, in consultation with Mr. Clayton, a gentleman 60 years of age, of a full habit, corpulent, asthmatic, who, fourteen days before, had fallen out of bed, and incurred a severe wound of the outside of the knee, from striking a chamber utensil, which was broken by his fall. The integuments, which had been cut through for the length of five inches, had been brought together by sticking-plaister, and the patient had been kept as still as an asthmatic cough and an irritable habit would allow. The synovial cavity had not been opened. In the course of a few days the joint became swollen, tender, and painful. On the thirteenth day, the wound of the integuments now granulating healthy, the granulations at the centre gave way; a gush of synovia took place from the joint, and the pain was relieved. The following day, the distention and the pain had returned. The point which had before given way was now opened with a probe, when the synovia again escaped: the pain was relieved. After this occasion, the joint did not require to be artificially opened: the synovia freely escaped, and continued to do so, lessening only in quantity, (but never altering in quality), for two months. The joint then ceased to discharge; and what remained of the original wound, closed. This patient is now able to walk about tolerably well, the joint being but slightly swollen, and weak. When a healthy joint is laid open, if it does not unite by adhesion, the consequences to be apprehended are inflammation of the synovial membrane, rapid disappearance of the cartilage; and even if the patient recovers, and preserves the limb, partial or complete anchylosis.

β. The inflammations of a constitutional character, which attack the joints, are of five kinds:—

1. After wounds, or surgical operations, an ataxic fever is often set up, which is attended with acute inflammation of one or more joints. In a young woman, seemingly in perfect health, a hardened subcutaneous lymphatic gland was situated above the breast, disconnected with it. It was cut out by Mr. Joberns. Great constitutional disturbance followed, which ended in the death of the patient, a few days after the operation. In her brief illness more than one joint swelled. I recollect accurately the appearance of one knee-joint: the synovial membrane was highly inflamed, and its cavity was filled with what looked like a mixture of synovia and pus.

2. In conjunction with rheumatic fever, several joints often become inflamed and distended with fluid. This, it is probable, is commonly synovial only. In a case under Mr. Hawkins's care, in St. George's Hospital, a patient, ætat. 39, who had often suffered from rheumatism, died of inflammation of the pleuræ, sixteen weeks after a general rheumatic seizure of his joints from cold. "The synovial membrane of the right knee was full of a dark-coloured fluid, not purulent, but having the appearance of a thick synovia, tinged with blood. The synovial membrane was everywhere of a red colour, as if stained by this secretion; and the cartilages of the joint were similarly stained. There were small extravasations of blood in the cellular membrane, external to the joint."

3. I am not sufficiently acquainted with the pathology of gout to state what the tissues are to which it is confined in the inflammatory stage; but I conjecture that the synovial membrane is involved, with the other tissues, in this specific inflammation. At all events, the specific deposit, which is occasionally found in the cartilages, ligaments, bones, tendons, muscles, and ligaments, around gouty joints, is likewise found upon the free surface of the synovial membrane, and contained in its folds or fringes. Chalk stones, which attain a large size, are not mere earthy concretions; they have a kind of organization. A gentleman, between 40 and 50 years of age, was attended by Mr. Annandale and myself, for gouty concretions about several joints. One of the tumors was situated upon the back of the second joint of the ring finger, and proved particularly inconvenient, as our patient took pleasure in playing as an amateur on the violoncello. Upon this account, at his request, I removed the tumor by an operation. The operation was intensely painful. The mortar-like substance of the concretion did not form an unorganized mass below the skin, but was permeated every where by exquisitely sensible filamentous threads. The patient recovered, eventually, the use of his finger, but the wound was long in healing, the formation of the gouty deposit going on plentifully for several weeks after the operation, and filling the wound and exuding upon the dressings.

4. Inflammation of several joints frequently occurs in syphilitic cases. As far as I have seen, the synovial membrane is less affected than the other tissues in this disorder. The inflammation of the periosteum in syphilis shews how prone the fibrous tissues are to be attacked in this complaint.

5. Inflammation of the synovial membrane of joints is occasionally dependent on gonorrhœa. In this case the disorder sometimes bears a fixed and chronic cha-

raeter, and may be associated with ophthalmie inflammation. Sometimes the attack has the acute charaeter, and is observed to occur upon the sudden disappearance or diminution of gonorrhœa. Often the inflammation leaves the joint first seized abruptly, and either transfers itself to another joint, or returns to the mucous membrane of the urethra.

γ. Inflammation of a single joint from a neglected injury or eold, is least formidable when early attended with inereased secretion of synovia, and even with thickening of the synovial membrane. The inflammatory disposition, finding this vent, does not produce more serious misehief. The following is an instanee. Sarah Welsh, æt. 21, has now been nine months a patient in the Middlesex Hospital. Four years ago, after kneeling on a stone floor, the knee suddenly swelled, and beeame painful. She continued, however, to get about. At one time the pain and swelling would be greater, at another less. At the time of her admission, the knee was greatly distended, the synovial membrane sensibly thiekened, the joint painful and weak; the pain aggravated on motion: there was no roughness of the articular surfaees. The knee is now reduced to nearly the size of the other, the fluid almost absorbed, the pain gone, her strength returned.

δ. Aeute inflammation of the synovial membrane leading to suppuration and ulecration of that membrane, is of extremely rare oecurrenee. Sir Benjamin Brodie narrates two such eases, of whieh the following is one:—

A child, nine years of age, fell, and wrenched her hip. In the evening she went to a danee, and while there, was seized with a rigor, followed by pain in the thigh and knee; she died a week after the accident. The hip-joint on the side injured eontained about an ounce of dark-coloured pus; and the synovial membrane, where it was refleeted over the neck of the femur, was destroyed by uleeration for about the extent of a shilling.

ε. Aeute inflammation of the synovial membrane, unrelieved by effusion into the joint, will sometimes excite a wonderfully rapid ulceration of the cartilage. Cases of this description are rare. As far as I have seen, their only favourable termination is in anehylosis. They are often attended with a suppuration in the cellular membrane adjacent to the joint. In one of the cases of this description which I have witnessed, and whieh alone I shall detail on the present occasion, several joints were simultaneously attaeked. In two other cases, the attack eommeneed in one joint, and after a few hours took to another, in which it finally settled, leaving the first.

A boy, 14 years old, died in the Middlesex Hospital of hernia eerebri, three weeks after a fracture of the skull. He was perfeetly well till the aecident. Four days after its oecurrenee, a joint of one finger, and one ankle-joint, beeame swollen and stiff. The swellings suppurated, and were opened. On examining the parts after death, the abseesses were found to have no eommunieation with the neighbouring joints; the joints eontained no fluid or false membrane; the eapsular synovial membrane was inflamed and thickened; the cartilages were partially absorbed, and in each joint with the same eharacter. The cartilage of the under surfaee of the astragalus had beeome so thin as to be semi-transparent; the layer whieh remained was smooth, of the natural texture, and firmly adherent to the bone. The eartilage upon the tibial aspeet of the astragalus was nearly wholly absorbed; patches only were left at the extremities of the upper and lateral edges, which were smooth, and firmly adherent to the bone. The exposed surface of the astragalus was healthy.

ϛ. Sir Benjamin Brodie, in his masterly work upon joints, dwells partieularly on the ease of John Child, as exemplifying disease of the knee-joint *beginning with ulceration of the articular cartilage.* This patient, ætat. 33, in April 1814, was seized with a pain in one knee. This pain at first was slight, but gradually became severe. It was referred principally to the head of the tibia in each side of the ligament of the patellæ. *At the end of five months, the joint for the first time beeame swollen*, and the swelling soon attained a eonsiderable size. It is unneeessary to quote the case further than to state that the patient, under proper treatment, recovered.

This is one of a class of eases in which Sir Benjamin Brodie deseribes two stages—one of ehronic ulcerative disease of eartilage, a second of more or less violent inflammation of the synovial membrane, with effusion of lymph and puriform fluid into the joint. It is my strong impression, however, that in all these cases there is an earlier stage; one, in which inflammation of the synovial membrane exists, whieh being unrelieved by effusion, or thickening of the membrane, vents itself in the ulcerative action which it excites in the adjaeent eartilage. I will mention one striking case, whieh illustrates the view whieh I have adopted. Jane Dean, ætat. 17, was admitted into the Middlesex Hospital in June 1833. The preceding April the lower-outer, and anterior part of the left knee, beeame full and painful, which she attributed to cold, from kneeling upon the stones. Cupping, poultiees, and a liniment, were used. The slight fulness went

away, but a pain which she had felt from the first, deep in the joint, now increased. The application of a blister mitigated the pain for a time; afterwards cupping twice repeated, leeches, and the use of a cold embrocation, had nearly removed it, when, upon using the joint in walking, the symptoms became aggravated. At her admission, but for a slight fulness to the outside of the patellar ligament, the knee had the appearance of being free from disease; but she was never without throbbing pain under the knee-pan, which was increased by motion or pressure. There was no mechanical impediment to perfect flexion or extension. From the period of her admission (the 18th June) to the 7th of February, when, after every remedy had been tried in vain, the limb was amputated, this patient, with one brief intermission, became progressively worse. The pain, during the last two months, was insupportable, and she obtained very short intervals of broken rest at night, through large doses of laudanum. The pain in the knee did not alter its place or character; but latterly, with the constant sense of throbbing, the patella felt as if lifted up. The leg wasted; the ankle and instep became œdematous. The slightest touch on the knee aggravated the suffering. Upon examining the amputated knee-joint, which was previously injected, the capsular synovial membrane was found highly vascular, but not thickened. Upon parts of the cartilage of the patella, of the inner condyle of the femur, and of the semilunar cartilages, the vessels of the synovial membrane were filled with the injection. Upon the patellar surface of the inner condyle, the cartilage was ulcerated, presenting some extent of irregular excavation. The synovial membrane adjacent to this, and, which is remarkable, covering a part of the ulcerated surface, was particularly injected. The texture of the cartilages of the joint was natural, and their adhesion to the bone perfect; but they had a slightly greenish tinge, which bore a remarkable contrast with the clear blueish whiteness of the cartilages of the ankle-joint.

The preceding case (attended, indeed, with very aggravated and unusual suffering) may serve to exemplify what I believe to be the ordinary course of ulcerative disease of the cartilage of joints: I suppose that inflammation of the synovial membrane first occurs, which, after an interval, is followed by ulceration of the articular cartilages on their synovial aspect; leading finally to increased synovial inflammation, to more extensive ulceration, to effusion of lymph and pus into the joint, and the formation of abscesses in its vicinity.

η. The following case well exemplifies the commencement of disease in inflammation of the articular aspect of the bones, as well as of the synovial membrane, leading to absorption of cartilage often on both aspects:—

E. D——, ætat. 20, was admitted, November 30th, into the Middlesex Hospital. Three years previously, she had been attacked with pain and swelling of the left elbow-joint, which, being treated with leeches and embrocations, went away in nine months. Shortly after her recovery, the left knee began to swell at the lower and fore part: the swelling was attended with pain, which, although constant, was severe at times only; she thought it rheumatism. A year before her admission, the disorder in the knee became more serious; at times it confined her to her bed. The joint was hot, stiff, and painful. Several blisters were then applied in succession, and with some advantage. Other remedies were tried, but ineffectually. At the time of her admission, and for a month previously, she had been suffering the acutest pain, which the least pressure or motion aggravated to intolerable intensity. The knee was very slightly or hardly swollen; it was a little bent. There was no mechanical impediment to further flexion. Upon opening the knee-joint after amputation, a tea-spoonful of thin yellowish synovia escaped. The capsular synovial membrane was inflamed and thickened, and presented a jelly-like granulated surface, which extended a little way over the cartilages of the condyles. The cartilage was partially ulcerated on its synovial surface, on the femur, patella, and tibia. More serious disease was found at the junction of the cartilages and the bones. When the cartilages were cut through, either half of each could be easily torn from the bone. There were parts at which a discontinuity of substance appeared to have previously existed, the surface of the cartilage being slightly excavated, and the opposite surface of the bone ulcerated and extremely vascular. At other parts the cartilage did not come away clean, but tore off with it numerous granules of bone from the surface. This arose from the surface of the bone, for the depth of a line, having been highly inflamed and softened in its texture, so that it gave way to very slight force. Beyond the surface, the bone was perfectly healthy.

θ. Ulceration of cartilage takes place secondarily in strumous disease of the bones. The practitioner is led to suspect this form of disease by the little pain and disturbance of the constitution which attends the slow swelling and progress of the articular disease, as well as by the general physical character of the patient. In the

lecture upon caries I have already adverted to this subject.

ζ. The morbid alteration of structure of the synovial membrane, of which I have already described the appearance, was originally observed by Sir Benjamin Brodie. Its progress is characterized by the filling up of the joint with a peculiar fleshy growth, which, without pain, simply impedes its motions. It is the tendency of this formation, after existing three or four years, to ulcerate; the ulceration spreads to the remaining articular tissues, and the joint becomes finally involved in the same general characters of destructive disease, which manifest themselves in the worst cases arising from inflammation, or from scrofulous affection of the bones.

κ. The loose bodies, which are found in joints, are of five different characters.

Sir Benjamin Brodie describes cases of inflammatory swellings of joints with effusion, on examining which a sensation is communicated to the hand, as if produced by a number of small loose substances, of a soft consistence, within the cavity of the joint, and just perceptible to the touch. He conjectures such loose substances to be portions of coagulated lymph which may have been effused on the inner surface of the synovial membrane, and afterwards have become detached.

What are termed loose cartilages, and have a texture which corresponds with the name, are growths that form immediately beneath the synovial membrane, where it either covers the bone or lines the capsular membrane. For a time they adhere by a pedicle, which is eventually ruptured by accidental force, or by the common motions of the joint. The inconvenience which they produce results from their moving freely in the articular cavity, and occasionally becoming wedged between the cartilages, causing intense and sickening pain.

The texture of detached bodies in a joint is sometimes bony, when they are formed in the manner described above. But Sir Benjamin Brodie mentions two cases in which the loose bodies being bony had a different origin. It occasionally happens, he remarks, that a bony ridge is formed, like a small exostosis, round the margin of the cartilages of the knee-joint In the two cases alluded to, this preternatural growth of bone had taken place, and, in consequence of the motion of the parts upon each other, portions of it had been broken off, and lay loose in the cavity of the joint.

The capsular synovial membrane of a joint is sometimes covered with a growth of pendulous little bodies, resembling melon-seeds in appearance, but of various sizes. This was the case in a patient between thirty and forty years of age, in whom I tied the external iliac artery for inguinal aneurism, and was afterwards compelled to tie the common iliac, upon secondary hæmorrhage supervening. The patient did not long survive the second operation. I was led to examine the knee-joints, observing that they were enlarged. Both were found to contain a little fluid. The capsular synovial membrane of each was covered with little pendulous bodies of different sizes, in their texture softer than cartilage. The patient had been used to walk about and take exercise; he was generally free from pain in the knees, but at times he had had attacks which were considered to be rheumatic gout.

Sir Benjamin Brodie describes a case in which he operated for the removal of a loose and moveable substance from the knee-joint: he found it, however, to be adherent; it was attached below the patella by a broad adhesion: this was divided, and the tumor extracted. The patient did well; and, notwithstanding severe inflammation which followed, the joint admitted of a considerable degree of flexion and extension. The tumor was two and a half inches in breadth, and somewhat less than half an inch in thickness at the thickest part; convex on one surface, and somewhat flattened on the other. It was of a firm fleshy structure. The general appearance of the tumor a good deal resembled that of the coagulum which is found in the sac of an aneurism; but it was not laminated; it had a smooth membranous surface, and it was manifestly organized, as vessels might be distinctly traced ramifying through its substance.

SMALL HOSPITALS.

To the Editor of the Medical Gazette.

Sir,

Allow me to inform your anonymous correspondent, who signs himself "A Convert to Disinterested Opinion," that Dr. Elliotson, in his introductory clinical lecture at the London University, did not state "that it is only in a small hospital, containing from forty to eighty beds, that the student can hope to obtain any real knowledge of his profession." What he did state was, that a hospital containing from a hundred to a hundred and fifty beds was *sufficient* for the purposes of clinical instruction; that in large hospitals, the far greater number of cases could not be studied by the pupils, and that the most assi-

duous limited their attention to a certain number at a time—attending to the practice of but one, or at the utmost two, of the physicians and surgeons at once, and either never witnessing the practice of the rest, or taking it in succession. He did not say that small hospitals were superior, but equally good clinical schools; and I recollect he distinctly declared this advantage to exist in very large hospitals—that from the greater number of patients received, one instance, at least, of the most rare cases and operations was almost sure to be witnessed by the pupil during his attendance: and he moreover added, that he hoped to see the University Hospital much enlarged.

As to your anonymous correspondent's sarcastic allusion to Dr. Elliotson's disinterestedness, it is certain that Dr. Elliotson must have given up some hundreds a year in giving up St. Thomas's, and he officiates at our hospital for nothing.

I am, sir,
Your obedient servant,
GEORGE WRIDE.

University Library, Dec. 15, 1834.

[Mr. George Wride will find, if he turns to Dr. A. T. Thomson's published lecture, that he refers to what was said by Dr. Elliotson; and this, we presume, confirmed our correspondent in the belief of what he had heard. We are glad to be assured by Mr. Wride, that the learned Professor of Medicine "hopes to see the University Hospital much enlarged," because this shews that he agrees with us in thinking it at present "much" too small. As to the rest, gentlemen may write about it as they please, but it is quite notorious that the Professors of the London University praise small hospitals because they could not manage to get a large one; and that as to attending *gratuitously*, it amounts to this—they could not have had even their minimum of a hospital except by giving up the fees; by doing which, they calculate that if the thing goes on, the number of pupils attending their lectures may possibly be increased. It is a very good piece of worldly wisdom; but to call it disinterestedness, is — mere humbug.—ED. GAZ.]

PHYSICIAN TO MARY-LE-BONE INFIRMARY.

THIS election took place yesterday; the following was the state of the poll at its close:—

Dr. Clendinning 12
Dr. Carsham 5
Dr. Marshall Hall 2

NEW MEDICAL WORKS.

An Inquiry into the Nature, Causes, &c. of Lateral Deformity of the Spine. By E. W. Duffin, M.D. 2d edition, 8vo. 8s. cloth.

Popular Guide to Health. By J. Burns, V.D.M. 12mo. 3s. 6d. bds.

An Inquiry into the Nature and Properties of the Blood. By C. T. Thaekrah. Arranged, with a Biographical Memoir of the Author, by Dr. Wright. 8vo. 7s. 6d. bds.

Boott's Life of Dr. Armstrong, and Inquiry into Malaria, &c. Vol. 2, price 14s.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO RECEIVED CERTIFICATES DEC. 18, 1834.

John Chapman, Stoneleigh,
William Friend Morey, Portchester.
John Francis, Westerham.
John Bird, Sturminster.
Wm. Henry Octavius Sankey, Wingham.
John Moore, Kilraughts, Antrim.
William Heane, Gloucester.
Robert Eddowes, Loughborough.
John Chapman Green, ———
Hugh Pitter Fuller, Croydon, Surry.
Thomas Skelding, Bridgenorth.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *Dec.* 16, 1834.

Age and Debility	39	Hernia	1
Apoplexy	7	Hooping-Cough	7
Asthma	17	Inflammation	22
Cancer	5	Bowels & Stomach	1
Consumption	50	Brain	2
Convulsions	19	Lungs and Pleura	12
Croup	2	Insanity	3
Dentition or Teething	9	Jaundice	1
Diarrhœa	1	Locked Jaw	1
Dropsy	11	Measles	16
Dropsy on the Brain	6	Mortification	2
Dropsy on the Chest	1	Scrofula	1
Fever	4	Small-Pox	10
Fever, Intermittent, or Ague	1	Stone and Gravel	1
Fever, Scarlet	9	Thrush	1
Fever, Typhus	3	Tumor	2
Gout	1	Unknown Causes	2
Heart, diseased	2	Stillborn	9

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, *Latitude* 51° 37′ 32″ *N. Longitude* 0° 3′ 51″ W. *of Greenwich.*

Dec. 1834.	THERMOMETER.	BAROMETER.
Thursday . 11	from 26 to 41	30 42 to 30·50
Friday . . 12	29 47	30·49 30·41
Saturday . 13	36 45	30·33 30.29
Sunday . . 14	36 43	30 33 30·49
Monday . . 15	32 47	30·51 30·45
Tuesday . . 16	35 46	30·37 30·30
Wednesday 17	35 47	30·20 30·09

Wind variable, N. by E. prevailing.

The 11th, and evening of the 14th, 16th, and 17th, generally clear; otherwise cloudy, with a little rain on the 12th, 15th, and 17th. Sunshine frequent during the week.

Rain fallen, ·025 of an inch.

CHARLES HENRY ADAMS.

W. WILSON, Printer, 57, Skinner-Street, London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, DECEMBER 27, 1834.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture XIII.

DISEASES OF THE PARENCHYMATOUS STRUCTURE OF THE LUNGS.

ŒDEMA PULMONUM.

We now arrive at the consideration of Œdema Pulmonum.

By œdema pulmonum we mean an infiltration of serum into the pulmonary texture. This disease was first noticed by Albertini, and was afterwards pretty fully described by Barrere, Physician to the Military Hospital at Perpignan, in his "Observations Anatomiques," published in 1753.

This affection has often been confounded with hydro thorax, but we shall hereafter shew you that by the latter term we mean an effusion of serum into the bag of the pleura, while this is an effusion of serum into the parenchymatous substance of the lung. Both may arise from the same cause, but this is the anatomical difference between them.

Morbid Anatomy.—In cutting into an œdematous lung, serum immediately flows from the section, the quantity varying very considerably, so that only a small portion may escape, or there may be a pint, or a quart, or even two quarts. This serum is usually colourless and transparent, but sometimes of a slight fawn colour; and according to the duration of the disease it is more or less spumous: thus, if the disease be recent, the secretion is always mixed with a considerable quantity of air; if chronic, it contains scarcely any. The weight of the lung is increased, and it does not subside upon opening the chest. The lung still crepitates in the hand upon compression, because there is still a certain quantity of atmospheric air present. It also pits upon pressure, like an anasarcous limb. You will sometimes find that the blood-vessels which supply the organ are almost exsanguincous; they are colourless, and nearly empty, and the lung itself is generally of a pale grey or yellowish tint.

The spongy texture of the viscus is never altered in this disease; it may always be seen after a certain quantity of serum has flowed from the incisions; but when the lung is entire, it is difficult to distinguish the air-cells, in consequence of the fluid which fills them diminishing their transparency. The increased secretion is evidently contained in the interlobular cellular tissue, as well as in the air-vessels.

If the œdema be recent, it is always, as I have already stated, very spumous, which I apprehend arises from the fluid hardly having had time to discharge or dislodge the atmospheric air contained in the cells. If the œdema be of long duration, you will find that the serum flowing from the section of the lung is not spumous; and I presume that this arises from its having had sufficient time to displace the air. A short period before death it would appear that a certain quantity of serum is deposited in the lung, except in cases of great marasmus; so that you will frequently find, on making a post-mortem examination, œdema of the lung, combined with sanguineous cadaveric deposit, and these deposits are always found in a position relative to that in which the body has been placed. Thus, if it be placed on the back, then they occur at the posterior part of the lungs; if on the face, at the anterior part; and if on the side, laterally;

shewing evidently that the position of these fluids depends merely upon their gravitation.

Symptoms.—Functional Signs. — Dyspnœa is a symptom of this disease, and as a general rule, its intensity is proportionate to the quantity of fluid contained in the air-cells. A slight cough often also occurs, followed by the expectoration of an aqueous fluid, more or less in quantity; sometimes, however, there is no excretion whatever: but if the œdema be combined, as it often is, with pituitous catarrh, then the expectoration increases considerably, and changes also in its appearance. It then consists of a colourless pituitous fluid, very similar to the white of an egg, mixed with an equal quantity of water: it contains also bubbles of air. If inflammation of the lungs supervenes, a few sputa may be seen of a slight fawn, green or rusty colour, but still transparent; and sometimes, from the coexistence of mucous catarrh, there will float upon the transparent pituitous secretion a certain quantity of yellow mucus, often assuming an irregular round form. General serous infiltration of the body frequently accompanies œdema pulmonum.

Local Signs.—Percussion rarely affords distinct signs of œdema pulmonum, inasmuch as the disease attacks usually both the lungs, and consequently there is no difference in the sounds which may be elicited from the opposite sides of the chest. In most cases the sound thus produced is tolerably good, because there is yet a considerable quantity of air contained in the air-cells; but in chronic cases, when the serum has displaced the air in the vesicles, the sound is duller on percussion.

Respiratory Murmur, &c.—You may readily suppose, gentlemen, that the respiratory murmur becomes indistinct, as the air cannot freely enter into the lungs. You will recollect that whenever air and serous fluid co-exist in the aerian cells, that the "rhonchus crepitans" is produced. It is therefore very distinct in this disease; the bullæ convey to the ear a sensation of humidity, and are larger than in peripneumonic engorgement.

As the local signs of œdema pulmonum and peripneumonia in its first stage, are the same, it becomes difficult occasionally to determine which disease it is; but inflammatory engorgement is almost always attended by fever, œdema rarely; engorgement is an acute disease, œdema most frequently a chronic one: the latter is commonly a symptomatic affection; the former an idiopathic. Yet it must be admitted that sometimes the diagnosis is attended with considerable difficulty, and requires great caution.

When the lung is also emphysematous, or when a severe dry catarrh supervenes, the diagnosis becomes still more difficult, as the respiration is too slight to produce crepitation. By desiring the patient to inspire deeply, or to cough, you will often, nevertheless, hear the rhonchus crepitans.

Causes.—Œdema pulmonum is very rarely indeed an idiopathic affection; it is almost always consequent upon some other disorder. First, it may arise where there is a general serous diathesis, in which the whole body is in a state of dropsy. Secondly, it may be consequent to certain fevers, more particularly of the eruptive class, and especially scarlatina. Thirdly, it frequently co-exists with measles and its catarrh. Fourthly, you recollect I mentioned that in the resolution of peripneumonia in the first stage, the red colour of the serum became absorbed, and the fluid which remains is colourless; the portion of the lung affected is then in a state of œdema. Fiftly, it accompanies chronic catarrh, more particularly the chronic pituitous form, and especially pertussis. Sixthly, and lastly, it arises from diseases of the heart.

These are nearly all the circumstances in which we find œdema pulmonum. Of all these causes it is most frequently the consequence of diseases of the heart, and then it may be considered as a dangerous symptom. I shall here endeavour to explain the general theory of dropsy arising from obstruction to the current of the circulation.

It must be well known to you, gentlemen, that the cellular tissue of the whole body, and the free surfaces of the serous membranes, are constantly bedewed with a secretion by means of which the organs move easily upon each other: this secretion is deposited by the arterial capillaries, and as the function is constantly acting, the fluid would accumulate, were it not for the absorption which is as constantly performing also: so that in the healthy state there is a perfect equilibrium between the quantity of serum secreted, and the quantity absorbed. That the function of secretion of the serum is effected by arterial capillaries, there can be no doubt. It is not doubted either, that the vessels, called absorbents, absorb; but it has been supposed that the venous capillaries perform the latter function also. To determine this point, Magendie made several experiments, and the one I am about to detail seemed confirmative of the latter opinion. The hinder limb of a tolerably large dog was amputated high up, and its separation rendered complete, with the exception of the femoral artery and vein, so that the limb hung suspended to the body by these vessels, the loose cellular substance around them being carefully dissected off. The upas, a most po-

tent poison, was then inserted under the skin of the amputated leg, and in a very short time its baneful effects became apparent in the body of the animal. Now the poison could only have entered into the general system by the femoral vein; for it would be inconsistent to suppose it could have ascended in the artery, since it would have gone against the current of the circulation. It was now objected that although the artery and vein might be clearly dissected of its surrounding loose cellular tissues, yet a sufficient number of absorbents might be left in the parietes of the vessels to admit the passage of the subtle poison. To answer this objection, Magendie, with great tact, after cutting off portions of the vein and artery, contrived so to introduce corresponding pieces of quills in their places that the blood flowed through them instead of the living vessels; yet the upas produced its effects in the same manner. This experiment seemed to be conclusive of the fact of the absorbing power of veins.

Lippi, of Florence, however, shewed that the lymphatics not only had a termination in the thoracic duct, but, as they followed the course of the veins, and were in close contact with them, they opened by minute orifices of communication into them, so that mercury injected into the lymphatics might be made to pass into these vessels; and I present you a preparation, in which mercury, injected into the lacteal absorbents, passed into the mesenteric veins; so that it is quite possible, in Magendie's experiment, that the poison first flowed into the absorbents, and from thence, by the minute orifices of communication, into the veins of the amputated portion of the limb, and that, consequently, the blood circulating through the isolated vein or the intermediate quill, was mixed with the poison before it had arrived at them. It is true that this demonstration does not disprove the absorbing functions of the veins, but it invalidates the experiments of Magendie, by shewing that they may be explained in another manner.

Under the supposition that either one or the other set of vessels absorb, or that they both do (for there is no inconsistency in the latter hypothesis), the following general proposition is not the less true: That any cause obstructing for some time the free current of the blood in the veins, will occasion an accumulation of serum in the parts from whence that blood is immediately derived. Thus it is a fact well known, that when the impregnated uterus enlarges to a certain extent, it often presses against the iliac vein or veins, and produces an enormous swelling of the corresponding limb or limbs: in this case the veins of the extremity affected become too full, and they are often seen blue, meandering and varicose in consequence: no serum can now be absorbed, for there is no room for additional fluid in the veins, admitting that these vessels alone absorb. Admit, again, that Lippi's demonstration be fully proved, as I think it is, that the veins receive the serum by the minute orifices I have spoken of, still there is no room in the already-filled vessels to receive the lymph, and the lymphatics must become gorged also, and their function suspended. Finally, supposing that the lymphatic vessels alone absorb, we know that the parietes of the veins are so interlaced and interwoven by the absorbents, particularly the iliacs, that it is impossible to press upon the one system without pressing the other. I repeat again, that pressure upon the veins occasions dropsical effusion in the parts supplying them with blood, or, in other words, destroys the equilibrium between secretion and absorption in those parts.

Let us examine now how certain diseases of the heart produce dropsical effusions. You will soon perceive here that it is from obstruction to the venous circulation, although a small part of the arterial is involved in it also.

The aortic orifice is often obstructed, either by ossific or cartilaginous deposits in its valves, or by congenital malformation. Let us suppose the calibre of the aorta at its origin to be diminished one half: as the blood arrives at that orifice from the lungs in its ordinary quantity, and only half of the column can pass through it, it follows that that fluid must accumulate in the left ventricle, the parietes of which often increase in muscular thickness, and acts most energetically to overcome the resistance before it, or it dilates, or both these circumstances occur at once, the left ventricle being then said to be in a state of hypertrophy and dilatation. As the left auricle is a continuation of the ventricular cavity, it also becomes gorged with blood, and its parietes become thickened or dilated; the four pulmonary veins are filled also to their capillary extremities, and so far the arterial system is alone affected; but now the pulmonary arterial capillary vessels meet with their obstruction, in consequence of the fulness of the pulmonary veins; the pulmonary artery becomes gorged with blood, and as the right ventricle and auricle are continuations of the canal, they soon arrive at the same state of plethora. Thus in the whole round of the smaller or pulmonary circulation, a series of obstructions exist, the one consequent upon the other, and the result is, that the veins cannot take up the serum in the air-cells, or in the pleuritic cavity, nor can the lympha-

tics, from the general plenitude of both sets of vessels; and œdema pulmonum, or hydro-thorax, or both, may be the consequence.

We will now trace the manner in which dropsy forms in the general cellular tissue. If the right side of the heart become loaded with blood, from the obstruction at the aortic orifice, the blood from the venæ cavæ meets with its obstruction in the habitually overfilled cavities of the right auricle and ventricle. The superior cava swells; its branches, to their capillary extremities, become congested; the sinuses of the brain become turgid; the face and lips assume a leaden hue, and swell, and this swelling depends upon an accumulation of serum in the cellular tissue of the parts, arising from the obstructed state of the superior cava.

If the fulness of the superior cava produce these effects, where the propulsion onwards of the blood not only arises from the *vis-à-tergo*, but is also accelerated by the force of gravitation, a similar series of results must more certainly occur in the system of the lower cava, where that fluid has to mount by the mere vital force: abdominal dropsy, and general cellular serous effusion of the inferior extremities, then take place.

Treatment. — The treatment of œdema must depend upon the disease with which it is complicated. Thus, if it arise from a general serous diathesis, in all probability there is a disease of the heart, and this is the organ to which your attention must then be directed. If an organic lesion exist, palliative measures only can be adopted, the disease itself being generally incurable. In such circumstances, diuretics, mercury, and the occasional administration of elaterium, are useful. When it occurs at the termination of fever, except dyspnœa take place, there is but little danger, and it will generally give way to tonics, purgatives, and particularly to mercury. If it accompany measles and catarrh, the treatment will then merge into that adapted for these complaints. If it be the result of peripneumonia, it requires little or no treatment; if it be conjoined with pertussis, the treatment must be the same as described for that affection.

APOPLEXIA PULMONUM—OR HÆMOPTYSIS.

We now pass on to the affection called by Laennec *Apoplexia Pulmonum*, or that state of the lung which is the most frequent cause of hæmoptysis, or spitting of blood.

It is a singular fact that although this disease has been known from remote antiquity, although it is somewhat a common affection, yet its morbid anatomy has not been understood until lately; it has generally been supposed that hæmoptysis arises from the bursting of large blood-vessels; but that is an erroneous opinion: it seems rather to depend upon an exudation of blood from the capillary vessels of the lungs.

Morbid Anatomy.—Laennec has given us the following description of the morbid anatomy of this disease.

The lung becomes as firm as in ordinary hepatization—I should say even much firmer. The disease is always partial, and rarely affects a large portion of the organ: its extent varies from a pin's point to three or four cubic inches: the firmness is most frequently exactly circumscribed, and the engorgement is as great at the circumference as at the centre: there is no gradual diminution of density, as in hepatization, but a distinct line of demarcation separates the healthy from the diseased parts: the surrounding cells are usually healthy and erepitant; they are often even paler than natural; sometimes they present a rosy or even red colour, depending upon the infiltration of a certain quantity of coloured serum.

The colour of the diseased part is of a deep black red, similar to that of a clot of venous blood, and differing from that of hepatization inasmuch as the former is homogeneous, and permits us no longer to distinguish the bronchial tubes, the blood-vessels, or interlobular cellular substance; for all are involved in a deep red colour. The neighbouring veins are often filled with concrete and half-dried blood. The lung, if torn, presents a granular appearance like hepatization, but the granules are larger.

The pulmonary tissue is less humid than in hepatization; you may scrape from the surface of a section a small quantity of black and half-coagulated blood; sometimes the centre of the apoplexy is softened, and filled with a clot of pure blood. It occasionally, though rarely, happens, that the substance of the lung may be torn by the sanguineous effusion; and Corvisart mentions an instance in which the pleura was lacerated, and the blood escaped into and filled its cavity.

Several apoplectic engorgements may occur in the same lung: often both lungs are simultaneously affected; and although they may be found in all parts of the organ, yet they are most frequently situated in the centre of the inferior lobes.

It is very easy to distinguish this disease from the ordinary cadaveric engorgement. In the latter case a red and spumous serum flows from the section, which fluid gravitates towards the lower part of the lung. The œdematous effusion is not circumscribed; there remain always some degree of crepitation; no granules can be seen, but the areolar texture of the

organ is to a certain degree apparent, and the lung may be rendered flaccid by repeated washings in water. A pulmonary apoplexy is always exactly circumscribed, very firm, of a blackish red colour, granulated, and scarcely humid, becomes but little paler by frequent ablutions, and then does not lose its firmness.

Resolution may even take place in this morbid condition or the lung, for many persons recover. In the few cases which Laennec had seen, it appeared that the engorgement passed successively from a black to a pale red colour, and that it gradually lost its granulated texture and density.

[This demonstration was elucidated by a number of preparations, drawings, and diagrams.]

Signs—Functional and General.—The patient complains of dyspnœa, of oppression in the chest, and frequently of pains and heat along the course of the sternum. There is a frequent, short, and troublesome cough, depending partly upon the blood irritating the larynx as a foreign body, partly from the presence of that fluid in the trachea and bronchial tubes. The pulse is full, often hard, and presents a peculiar vibratory feel and quick movement, as if quicksilver were circulating in the arteries, constituting what is called the "hæmorrhagic pulse," and is often accompanied by the "bruit de soufflet" of the heart and arteries. There is rarely fever, and the skin is of its natural temperature, or nearly so.

But the great and distinguishing symptom of apoplexia pulmonum is the expectoration of blood. It is usually copious, and returns frequently for some hours or even days, accompanied by a distressing cough, oppression in the chest, and great anxiety: the face is at first intensely red, but afterwards becomes pale: the extremities are cold. When the spitting of blood is abundant, the cough is often slight, and it would appear by the movements of the diaphragm to be ejected by vomiting—a circumstance which, no doubt, frequently takes place from some of the blood having been previously swallowed: this is further proved by the alvine evacuations being almost always of a very dark black red colour, as we find during an attack of hæmatemesis.

The colour of the blood expectorated is bright red, or black; it is spumous, and often coagulated; the quantity varies exceedingly; it is often enormous: Laennec speaks of an instance in which ten pounds were expectorated in forty-eight hours. I have seen two or three cases of similar quantities. These quantities are not, however, certain proofs of the magnitude of the apoplectic engorgement, as the bronchial mucous surfaces sometimes, though very rarely, give origin to great hæmoptyses, and large apoplexies do not always give rise to great hæmorrhages; nay, it sometimes happens that an engorgement of one or two inches may exist without producing any expectoration of blood.

Local Signs.—From having seen in two or three instances the expectoration of blood increased by an injudicious mode of examining the chest, particularly by obliging the patient to inspire deeply for the purpose of hearing the sounds more distinctly, I rarely now make any local observations, except I can do so without occasioning the patient the slightest fatigue or change of position. A local examination is also less necessary, because the general and functional signs are upon the whole sufficiently evident to indicate, if not the seat, at least the nature of the affection, and the treatment required. But these signs are as follow:—

Percussion indicates but little, inasmuch as the apoplexy is usually but of slight extent, and is so placed towards the centre and base of the lung that no difference of sound can be appreciated: if, however, the engorgement be considerable, and approach the surface, then percussion would elicit a dull sound from the part of the chest corresponding to the part of the lung affected.

Auscultation affords two signs: the first is absence of the respiratory murmur, proportioned to the extent of the apoplexy: the second is a "rhonchus crepitans," surrounding the part where the murmur is inaudible, indicating the presence of slight rosy serum around the engorgement: this crepitation is heard at the beginning of the disease, and afterwards ceases. When these signs occur, it is evident that the hæmorrhagy has its source in the substance of the lung, and not in the bronchial tubes; but as, in bronchial hæmorrhagy, a mucous rattle, formed of bullæ with apparently thin parietes, and seeming to burst from distortion, is audible, particularly at the parts of the chest corresponding to the roots of the lungs, this species of rhonchus is doubtless produced by the presence of blood in the large bronchial tubes.

Causes.—The causes of apoplexia pulmonum are the same as those of bronchial hæmorrhagy; as, general plethora, the abuse of alcoholic fluids, singing, playing on wind instruments, violent exercise, blows upon the chest; in fact, any cause tending to accelerate the circulation.

A pulmonary hæmorrhagy may be vicarious of some other habitual discharge of blood; thus the suppression of the hæmorrhoidal flux has been said to produce hæmoptoe. The cessation of the catamenia

at the critical period of female life is certainly an occasional cause of this disease, and a surprising quantity of blood is sometimes lost from the lungs at this period, and yet the patients usually recover. I have also seen hæmoptoe co-exist with amenorrhœa.

Laennec observes that spitting of blood often occurs during the primary eruption of tubercles: it appears to me that that sign is most common at the time of their softening. The quantity is usually then inconsiderable; generally merely a few spots or streaks mixed with the sputa. It might be supposed that the destruction of portions of the lung consequent upon the softening of tubercles, and the formation of excavations, would produce considerable hæmorrhagy: I have seen such cases, but they are very rare; for, as we shall hereafter find, the blood-vessels, as they approach tubercular cavities, become obliterated.

Temperature has evidently an effect in the production of this affection: thus the sudden or long-continued impression of cold acts as a cause. Laennec conceived it possible, from seeing such immense quantities of blood occasionally ejected, that there must occur a sudden dilatation of that fluid. It is certain, when the atmospheric pressure upon the body is diminished, as in ascending high elevations, dilatation takes place, as the surface of the body then becomes turgid, and considerably reddened by the fulness of the capillaries, and effusions of blood from the nose, mouth, and bronchial surfaces, often happen. You will observe also, that when the heat is great and of long continuance, hæmoptysis is most common, as in the months of July and August.

Obstructions at the aortic or mitral orifices, by inducing sanguineous engorgement in the pulmonary circulation, may produce apoplexia pulmonum. These are, indeed, among the most common causes; but we shall advert to them again when we arrive at the description of disease of the heart.

A sudden and fatal hæmoptoe is sometimes caused by the rupture of an aneurism into the trachea or its pulmonary divisions. I present you specimens of these lesions.

Treatment.—As, in the ordinary forms of hæmoptysis, the pulse is strong, full, and jerking, so it becomes necessary to diminish the force of the circulation by abstraction of blood. Venesection is the best means of effecting this, and the quantity to be drawn should be proportionate to the force of the individuals, and to the fulness, tension, and jerking of the artery. I never consider the patient safe until this violent action of the pulse is subdued, or at least very much diminished. A large bleeding effected at once is better than a number of small bleedings. Cupping, or leeches, in some cases may be employed, when the patient's powers do not admit of general depletion.

The next point to be attended to, is to insist upon the most positive repose, both of limbs and voice; do not allow your patient to speak, put your questions in such a manner that he may answer you affirmatively or negatively, by gestures alone, recollecting that to speak it is necessary to throw the lungs into increased movement, and they should be as quiescent as possible.

You should allow a free current of cold air to pass over your patient; let him be but very lightly covered; wash the chest and neck frequently with cold water, or vinegar and water, or, what is better still, apply, from time to time, a large bladder containing a quantity of pounded ice, to the surface. Let the thirst be satisfied with cold fluids, avoiding of course all stimulants.

After having bled your patient, and placed him under the circumstances I have detailed, then you will find the administration of a drastic purgative to be useful: it was the practice of Sydenham, and it tends considerably to diminish the force of the circulation.

I confess I have not much confidence in other remedies in this disease: you will find that amongst them the digitalis is the best; alum, the acids, and the superacetate of lead, are commonly given, and you may use them according to the formula you will find in medical works. Dr. Rush, of Philadelphia, recommended large doses of common salt.

When the force of the pulse is diminished, and the violence of the disease is abated, counter-irritants applied to the chest, as dry cupping, stimulant embrocations or blisters, are most useful means of relieving any remaining oppression or dyspnœa.

You will occasionally find, in persons of debilitated constitutions, the hæmorrhagy to be of a passive kind, that is, the quantity of blood expectorated is, upon the average, small, the pulse weak, although frequent, with no jerking or fulness. In such cases, general bleeding cannot be borne; you must depend upon repose, upon the application of external stimulants, and upon the use of the acids and astringents I have already mentioned.

A teacher, gentlemen, is obliged to select for his subjects marked cases, so as to give good exemplary ideas. In describing this disease, I have taken two extreme instances; the one accompanied by increased tone of the system, the other by diminished power; but there are also all shades

of intermediate differences, requiring modifications of treatment, which neither my time nor your patience will permit me to detail; but the knowledge of which is to be acquired only by a sedulous attention to practical or, as it is called, clinical medicine.

CLINICAL LECTURE

ON

CANCER, MORE ESPECIALLY ON CARCINOMA OF THE MAMMA,

Delivered at the Middlesex Hospital, October 18, 1834,

By Sir Charles Bell.

The surgeons of this hospital are bound, after the example of the founders of the cancer-wards, to pay every attention to this important class of diseases. At present there are unusually few cases of cancer in the house, for there is perhaps not a month in the year in which we have not a great many more; and yet there are sufficient to mark the importance of the subject, and to excite your sympathy in the highest degree. There are cases before you sufficient to shew, that, whether you shall hereafter be physicians, surgeons, or accoucheurs, if you have practice at all, you are sure to encounter a great deal of responsibility on this subject, and you will be uncommonly fortunate, or callous, if you do not experience pain and trouble.

No wonder that authors have acknowledged their incapacity to define cancer, and their inability to treat it methodically; for the term *cancer* is a vulgar word; in common language it means a malignant ulcer which cannot be healed—which goes on progressively to the destruction of the patient; and a great many diseases must, of course, be spoken of under such a term as this. But the word we ought to employ is *carcinoma*, and the disease to which I shall first direct your attention is the carcinomatous tumor of the mamma, in women of a certain age. Gentlemen, I entreat your attention, for I am aware that what I have to say will little interest you unless you have a forecast of the very distressing questions you will have to determine on, and unless you consider the matter in a manly and rational way.

The term *scirrhus* is principally employed by the authors you study on this disease. Now scirrhus properly means only those hard tumors which may arise from a great variety of different causes, local as well as constitutional, and which hardness results from morbid interstitial deposits. Certainly, in some authors, you find the term *exquisite scirrhus*, by which they mean that hard lump which will, in process of time, form an open sore—a true cancer. I believe, then, I cannot be better employed than in explaining what scirrhus means, and how it may arise. Properly it means, then, only a hardening; and it may be by an interstitial deposit, a consequence merely of a slow increased action, or it may be attended with a peculiarity of action—that is to say, it may arise from partial and accidental irritation, or it may be constitutional.

To illustrate this, we shall take the testicle, as affording something like a fair parallel with the gland which is principally to engage our attention. You are aware that the testicle will swell with phlegmonous action, under the influence of inflammation in the urethra, occasioned usually by gonorrhœa—sometimes by the improper use of a bougie or catheter, or even in consequence of the operation of lithotomy. The effect of this inflammation will be a swelling, which, when it subsides, leaves a hardness, or scirrhosity; and I beg of you to notice a man in Stafford's ward, named Chaurnell, where you will find just such a scirrhosity of the testicle.

Finding the gland thus enlarged and hard, it becomes a question whether this be the effect of mere common irritation, and consequent common inflammation, or whether it be irritation influenced by the constitution. The same irritation will produce, in a young man, a scrofulous testicle, and in an elderly person a scirrhosity threatening cancer. The question how far the swelling is constitutional, enters into every consultation on such a case, and of course whether the swelling, being a consequence of mere irritation, is to be removed by subduing the inflammation, or whether we must not remove also the constitutional peculiarity. If a blow be inflicted on a bone, a very natural consequence of that would be a swelling, and sometimes a tumor or exostosis will arise from it; but if the person be labouring under syphilis, the tumor will not subside under depletion, leeching, fomentations, and so forth, because, although the vascular action which is in excess be removed, yet the influence of the constitutional peculiarity continues. In the same way, if a youth who is strumous, with a strong scrofulous condition, receives a blow, the effect is not merely such as would be produced in a healthy person—mere inflammation of the part, and swelling—but there is mixed up with it the

constitutional peculiarity, and you have to subdue the overaction, and at the same time support the constitution, or use those remedies which you know are good in a strumous habit. This I take merely as an illustration, and you will find the use of it as we proceed to our proper subject.

Do not be surprised at the volume of papers in my hands: these are the records of my observations on the subject, which, as surgeons of the cancer institution, we are bound to keep, and to lay before the board. I am using them as furnishing us with the best examples drawn from twenty years' experience.

The first general head to which I beg you to attend is this:—

OF THE PERIOD OF LIFE AT WHICH CARCIMONA APPEARS IN A WOMAN, AND THE MANAGEMENT OF THE FEMALE CONSTITUTION WHEN THREATENED WITH SCIRRHOSITY AND GLANDULAR ENLARGEMENT.

I am of opinion there is a family peculiarity of constitution connected with carcinoma. A woman in whose family scirrhus has appeared, ought to be more than usually cautious in attending to her health, and to the influence of the uterine change upon her constitution as she advances in life.

Secondly, there is, in my mind, a strong alliance between scrofula and cancer; so that in a family in which struma is inherited, there ought to be especial attention paid to the women of that family at the change of life—by which we mean when menstruation ceases.

Carcinoma, like some other diseases, is too apt to prevail in the descendants of such as have suffered from the disease. A person will come to you with paralysis, saying that his father suffered from this disease at the period of life in which he now presents himself; and the same is the case even with dropsy: a person will come and say, "my relatives have suffered from this complaint." So will a woman with a tumor which threatens to be carcinoma, come to you and say, "I am anxious about this; it makes me unhappy, because my mother and my aunt suffered from what I am now threatened with."

4thly. The age at which the disease prevails, is from 40 to 55; and it is more acute, runs a more rapid course, at 45, than from 55 to 65, or 70. It is very important for you to notice this. A woman presents herself to you as a patient, with a hardness in the breast threatening carcinoma. The disease will run more rapidly if she is only 38, or 40, than if she be decidedly an old woman. For example: there is an old woman, a patient of mine, in the cancer ward, with an enormous carcinomatous tumor, now extending over all the side. She is very old; but if she had been 40, these horrid tubercles would have burst into open cancer, and she would have died long since; whereas she has seen that ward filled and emptied many times, and now remains in a tolerable condition of health.

5thly. In men, as well as in females, we observe a climacteric period; and it is well to notice what takes place at this period of life, exclusive, I may say, of the uterine system, which claims such importance in the other sex. That condition, then, is marked by a gradual decay of strength, a listlessness of mind, an incapacity for business, and sometimes great depression of spirits. The secretions are disordered; and irregular slow fever affects him; there is thirst, but no want of appetite; and there is increased action of the kidneys. At such a time, the mind should be supported by friendly and social discourse, travelling, and change of scene; the digestion should be watched, and exercise enforced. But if, instead of this, when these symptoms prevail, some family misfortune or real cause of distress should unhappily befall him, ten to one but he will not be able to bear up against it: some organic disorder will begin to shew itself, with a certain indefinite change in the countenance and general expression. Happily, however, this condition of the general system very often passes off, and vigorous health is again established.

6thly. By this digression I mean to infer, that in women the change of constitution may not at all times depend upon the uterine influence, but may have a source more akin to what takes place in the other sex: yet I must affirm, that in ninety of a hundred instances of constitutional disturbances at the period alluded to, when the menstruation ceases, the ovaria and the uterus are the sources of disturbance. Nature has established a reciprocal action between the uterus and mammæ, and though widely apart, they are intimately united in sympathy. The parts in the pelvis are joined by juxtaposition, sympathy, and community of circulating vessels, but sympathy alone affords an equally intimate union between the ovaria and mammæ. Every change in the ovarian circulation has an influence: every change here, as you well know, or ought to know, has its effect upon the mammæ; the first period of puberty and the final period of change—menstruation, conception, quickening, delivery—all have this influence. In all these different conditions, the changes in the uterus and ovaria are attended with,

or marked by, pain and turgescence of the mammæ. At the final termination of ovarian action—that is, at the "turn of life,"—the irregularity of menstruation produces a most decided influence on the mammæ. It is this which lays the foundation of the disease we are to consider; yes, it is the disturbance of the uterine system which, at the change of life, produces irregular flushings of the face and depression of the spirits: we may see the individual flush, and hear her sigh; she then breaks out into perspiration, and the little paroxysm is over. The condition of the female system is said to subject them to inflammation and congestion at this time—to rheumatism and to erysipelas; and all this I can very well believe.

The number of young women, from the age of 16 to 25, who have presented themselves in the hospital with lumps in the breast, is fully equal to those who have presented themselves at a later period of life with carcinoma. We have to trace an influence of the same kind in both—namely, irregular uterine action: that which in the early period of life produces strumous lumps in the breast, at a later period of life will lay the foundation of carcinoma. I take an example from the papers before me. A young woman presented herself in this hospital with an enlarged hard mamma, in the expectation that we would perform the operation of amputation. When the breast was examined, we declared it was not necessary to operate; that the swelling, from her age and her constitutional character, was more allied to struma than to carcinoma; and we did not, and would not, operate; upon which it came out, that, in the country, they had taken off the other breast for a complaint exactly similar to that for which she now presented herself. The young woman was in these circumstances taken into the hospital, and from the remedies employed, by and by the tumor subsided, and she was dismissed cured. This is a remarkable case, but you will see many similar; you will see patients sent up for operation who are suffering from strumous enlargement of the mamma: hence you are to understand that, according to my experience in these matters, the uterine irritation that takes place on the first appearance of change produces swelling and disturbance in the mamma, and that such disturbance will leave after it a tumor of a strumous character; but the irregularity of uterine action taking place at 40 or 50, will not be attended with strumous disease, but with carcinoma—tumors of a worse and less manageable nature. Now this being the truth, it is very important that you consider it, otherwise you will be performing the operation of extirpation when it is not necessary; and you will observe, that the operation for carcinomatous mamma is considered with a more favourable eye by surgeons in general, because they do not operate in the true carcinoma, but in strumous disease of the breast. They take off scrofulous disease of the mamma, and the patient recovers, and lives long; whereas, were they only to operate when there is true carcinoma, their opinion would coincide with mine, they would be less sanguine—I mean in regard to the favourable termination after the operation of amputation.

What you see in the breast of a female, you see in the glands of the other sex. Suppose, for example, that there is a sore throat, or inflammation in the fauces, and that it produces a swelled lymphatic gland on the side of the throat; in a young man this becomes a scrofulous swelling, and abscesses, such as you see every Thursday among the out-patients. Now contrast these with the case which you have just seen in Hartford ward, where the patient has a scirrhous tumor in the neck. He tells you he had a quinsey—that was internal inflammation, producing action or excitement in the glands of the neck; and these, in a man 50 years of age, have taken on a carcinomatous character, and he is beyond our means of giving relief. The parallel, then, you see, is a just one.

In the next place, as there is a coincidence in time, so is there a considerable resemblance in the nature of the disease which fixes upon the ovaria and the mammæ; the difference is chiefly in their position as internal or external parts. This is a very interesting inquiry, because it embraces an extensive view of practice. The scirrhosity, I say, and hydatid tumors, to which the ovaria are subject, would become uncontrollable fungated ulcers were they attached to the skin. On the other hand, many of the hydatid and encysted tumors which infest the mammæ, and are the forerunners of so many distressing cases of ulcer and ill-conditioned sores, if they were seated in the ovaria, being internal, would smolder, and partake of a chronic state that would hardly interfere with the term of life.

Let us take our illustrations from some other departments of practice. You know familiarly well that an abscess makes its way to the surface. Why is that? It is not enough to say that it is a sort of intelligence, as Mr. Hunter would describe it, by which the disease makes progress to the evacuation of the matter: that is not the case; it is the consequence of a more general law, that action is more easily excited, and goes to a higher degree, in the surface, than in the deep part; and the

side of an abscess which is next the skin will enter more readily into inflammation, ulceration, and absorption, than the part which is deeper seated, or removed from the surface. The consequence of this law is, that suppuration tends ever to the surface; and you must have remarked, that when an abscess has been in a chronic state, being internal, no sooner does it reach the skin than it becomes highly active—that is to say, the skin inflames, it is rapidly absorbed, and the abscess points and discharges. If you be not convinced of this, take the example of an inflamed lymphatic gland. Suppose there is disease of the penis, and that, either by irritation of a lymphatic gland, or by an absorption of matter, it involves an external gland of the groin in inflammation; the consequence is bubo; but, as anatomists, you are aware that lymphatic vessels go round under the pubes, and into the pelvis, yet you never heard of a bubo within the pelvis. Even authors upon this part of anatomy and pathology tell you that there is no such thing as an inflamed and suppurative gland within the abdomen. They attribute it to Providence. I admire their tone of mind; but without profaneness, I would say the immediate cause is, that the gland is internal, and does not inflame—is not subject to inflammation from a degree of irritation which would cause suppuration in a gland lying immediately under the skin. There is a parallel case in the instance of a ball. A ball, as I stated last week, will accidentally remain some ten or fifteen years in the body, lying close to the vertebræ; but who ever heard of it remaining so long under the skin? No; it will remain quiescent, if deep, producing no re-action; but it will not remain 24 hours without inducing inflammation, if it be just under the skin. The uterus and ovaria are internal, the mamma is external; and when disease at this climacteric period affects the body of the uterus, it will long remain chronic, or quiescent; if it influence the os tincæ, the more external part, it will be more active and more destructive. But even here its rapidity will not be equal to that of the same disease affecting the mamma.

These remarks lead you to comprehend the reason of my very great desire to be particular in

The Mode of Dressing the Breast.

It is to make the mamma, as far as possible, an internal part, or, in other words, to protect it against the changes of temperature, and to give it a gentle and uniform support, and to soothe, not to excite, the skin over the gland. I shall now minutely describe the manner of dressing, believing that it is a lesson of the first consequence to you.

Whilst the dressings are preparing, let the breast be covered with a flannel fomenting cloth wrung out of a warm lotion (a drachm of extract of conium in a pint and a half of water;) prepare a soft ointment of the empl. thuris and extract of conium, or of mercurial ointment, or with a proportion of the ung. hydriod. potassæ; spread this on long slips of lint, and lay these slips over the tumor in all directions, covering it completely; cover this dressing with a piece of oiled silk, making a little slit for the nipple; over this lay a layer of cotton wadding, so that the breast be uniformly compressed, and the nipple guarded. Finally, swathe the bosom, and lay on each side of the neck shoulder straps, or the split cloth. Do not be satisfied with recommending the arm to be kept still, but put a turn of ribbon round the arm, and pin it to the side, or let the hand rest on a ribbon round the neck. (A bustling woman will quite defeat your purpose, by the incessant action of the pectoral muscle under the mamma.) This dressing should remain for three or four days.

The best example of the happy effects of this mode of dressing the tumor of the mamma, combined with proper treatment, you have in a woman who occasionally waylays me in the Northumberland ward. The reason is, that she was long an inmate of that ward, and is known to the nurse. Now that patient had an enlarged, hard, and knobby breast, which was by all of us condemned to operation. She refused to submit, and I was constrained to limit my treatment to the mode I have described, and the result has been a complete softening of the gland, and a disappearance of the "scirrhus."

I was led to these remarks on the local treatment of the tumor, by observing that disease of the ovaria or uterus very generally accompanies the disease of the mamma: so that when you see a scirrhous tumor in the mamma, you may be almost certain that there is more or less of the same disease in the uterus or ovaria; but it is not noticed in practice, because there are no prominent symptoms during life. There is scarcely a case, however, in which the patient dies of mammary disease, where you do not find a diseased state of the uterus or ovaria; and therefore, when you come to the question of amputation, you do not merely judge by the appearance of the mamma, by the condition of the glands of the axilla and neck, by the countenance and general appearance of the patient, but also by those symptoms which indicate uterine disorder; and although there be no diseased glands in the axilla, and nothing

very remarkable in the woman's countenance, yet if she be complaining of pains in the loins and hips, and down the thighs, which are indicative of disturbance in the uterine system, I would advise you not to operate, but to endeavour to alleviate the symptoms.

These remarks lead to a distinct object in practice—viz. to remedy the defects of constitution, and allay the irritation of the uterine system.

I have mentioned the constitution of men at that period of life, and may here notice that prostatic disease offers a fair parallel to glandular disorder of the female, and that it is one of the sequelæ of the same condition. I take this illustration. A young man comes to you, saying that he has got disease of the prostate; you are at once aware that he cannot be the subject of the "prostate disease"—that disease to which old men are subject. In the young man, the prostate gland becomes the seat of a scrofulous abscess, and it will wear out the constitution as effectually as a scrofulous abscess in the lungs; but he is not subject to that scirrhosity which is peculiar to advanced years, and therefore you may give him every assurance that he has not the prostate disease. But if a man of 70 comes to you in the same circumstances, complaining of disturbance at the neck of the bladder, and frequent discharge of urine in small quantities, and if he have neither the symptoms of stone nor a stricture in the urethra, you may be almost assured that prostatic disease is commencing, and that it is of a formidable nature.

I mean by this to remind you, that in men, as well as in the other sex, there is a disease peculiar to a certain period of life, and of the most serious nature—a disease which never takes place at an early period.

In regard to the constitution, to me, who in early life knew the merit and the excellence of Dr. Plummer's pill and diet drink, and its habitual use by the old practitioners of Scotland, it was a matter of surprise, about twenty-five years ago, to see the same treatment become quite the fashion here, under the authority of Mr. Abernethy's name. That gentleman had the unhappiness, I must say, to estimate public opinion very low; and singularly enough, the manner in which he marked his contempt, became the source of increasing popularity. I speak of this, because I am apprehensive that the admiration of Mr. Abernethy's practice may have gone too far, and produced a sort of re-action, and it may now be too much neglected; but it is founded in extensive observation, and is not to be lost sight of: you must not lend yourselves to mere fashion in these things. The system of old Dr. Plummer, which was to give his well-known pill at night and his diet drink, and to send his patient to the mountains to drink goats' milk, was effectual to the destruction of a variety of local diseases; and every apothecary in the northern part of the island knew this well long before Mr. Abernethy took it up; and therefore, from that long experience, and from the experience and authority of Mr. Abernethy, you must not throw it lightly aside. The blue pill and the bitter purgative draught are good; the compound calomel pill and sarsaparilla are good, for they are the means of exciting secretion in the bowels, at the same time that they soothe them by removing what is irritating. The bowels may be disturbed, and yet neither pinch nor give pain in any way; but they may produce irritability of temper and of constitution, or nervous depression, and thus lay the foundation of organic disease.

With respect to the great leading cause of all, in these diseases of women—viz. irregular and disturbed menstruation, it may be taken as a pretty general rule, that it must be treated by cooling regimen, the tepid shower-bath, the warm salt-water bath, friction of the whole body and loins, gentle exercise in the open air, and change of residence, if circumstances will admit of it. Travelling imposes on the rich and indolent a condition the most nearly approaching to that state of nature and of freedom which the peasant has by necessity. There may be found, in the cases that I lay before you, notices of women of corpulent habit, and in apparent health, but with pains in the breast, enlargement of the belly, sickness, and suppression of the menses; and such women, unless much care be taken, will have confirmed scirrhus. I will select a case of this, and give you a remarkable instance, because it is imagined that these sores never heal.

"Jemima Malone, 45 years of age, the mother of ten children, the youngest eleven years of age, four years ago first perceived a lump in her right breast, of the size of a marble. In the course of a year it had acquired the size of an egg. Two years after its commencement, she applied at St. George's Hospital, where she was recommended to have the breast removed; but to this she would not consent. The nipple at this time was not drawn in. About six months ago, the breast became discoloured, numerous small lumps formed round the larger tumor, and soon afterwards it became ulcerated and painful. The ulceration has since gone on gradually increasing, till it has attained its present immense extent. The tumor occupies the greater part of the right side

of the chest; the central point is deeply ulcerated, and sloughing around the ulcerated part, for about two inches. The skin is of a dark blue colour, and studded with small hard tubercles."

Gentlemen, you will at once acknowledge that this is an aggravated case of carcinoma. The report proceeds—"She still menstruates, and has always done so regularly: at the period of menstruation the breast bleeds. She has no difficulty in breathing, but has constant dryness of the fauces, which awakes her in the night with sudden choaking."

Now the case of Malone proved to be one of the most remarkable that has occurred for a long time, from the complete closing and cicatrization of one of the most malignant cancers. The circumstances of the case are still fresh in the recollection of every body. Her name appears in the books from June to November, 1830. When this patient came to the hospital, she was remarkably stout, with a full, ruddy face, altogether of the robust landlady appearance. She had this open cancer in one breast, and the tumor was of unusual size—fully half the size of the head. The nipple was eaten away by ulceration; a deep foul sore occupied the centre; the edges of the sore were abrupt, rugged, tuberculated; altogether this was the worst and most formidable case that the surgeon could well look upon. The remarkable circumstance was, that in the course of a few months the woman's whole appearance became altered; and it was obvious that a great constitutional change had taken place. She was always a timid and effeminate creature in disposition; but the robust, blown appearance, left her completely, and she became spare and thin, and her face pale, having now more the look which belonged to her real disposition. In the meantime a most astonishing change took place in her breast. The great mass fell low, the huge crater closed and gradually cicatrized, the edges of the ulcer also healed, and the appearance is now very remarkable. There was still the excavation and rugged edge, but the skin whole, and there was every appearance of a complete subsidence of that action which some months before seemed so very formidable.

It will be anxiously inquired, what was the treatment in this case. There was no specific medicine, but only that system pursued which I am anxious you should follow in these cases. I have already mentioned to you a patient who occasionally comes here on a Thursday, who had a tumor which, on a full consultation, was condemned for operation; but it has entirely disappeared, and there is now no disease whatever. These cases are important, because they furnish us with some hope that, even when circumstances are exceedingly bad, there may be an amelioration and cicatrization of the tumor.

When the menses stop suddenly, and return with a hæmorrhagic character, we can but suspect some disease already commenced in the uterus, and the *flow of blo d* —I mark that with emphasis—with unusual pain, proceeds from this source. You are aware that there ought to be no clot. This is a condition which requires the utmost attention. Camphor in pretty full doses, with extract of hyoscyamus and opium, will allay the pain. It certainly is not desirable to see the menses intermit; small bleedings, therefore, are proper enough at this period, and used to be more frequently practised than now. I confidently recommend you to bleed from the hæmorrhoidal vessels, by leeches, once a fortnight. The warm salt-water hip-bath has a very soothing influence, when there is pain shooting from the back to the pubes, and tenderness of the spine, which is a very frequent attendant on uterine irritation. Warm fomentations, with anodyne extracts in solution, are proper, applied not only externally, but to the os tincæ and to the vagina, by a well-contrived injecting apparatus: this greatly allays irritation. For example, the mucilage of quince seeds and extract of hyoscyamus or conium, tepid, form an excellent injection for the vagina. The pipe should be passed through a piece of sponge, which makes the injection easy, and does not disturb the parts within. If there be any indication of disturbance in the mamma, a seton or issue should be made in the arm. With respect to the bowels, it may sometimes be proper to use aloes and other warm purgatives, which operate on the rectum and hæmorrhoidal vessels; but sometimes they are to be especially avoided, and rhubarb, senna, and jalap, to be preferred. In cases of threatened carcinoma, a change of diet is advisable—for nothing is so serviceable in inducing a change of constitution. Coffee and milk for breakfast; rice-milk, with cinnamon, in the forenoon; a pudding made with egg for dinner, and milk, or soda-water, and a biscuit or rusk, in the evening, is enough of nutriment. If our patient has been in the habit of taking meat at dinner, a heavy supper, and something comfortable on going to bed, which is the way that the principal part of the patients live who come here, we may expect present advantage from such a mode of living as I advise. The treatment that is adopted, local and general, with advantage, in cases of struma, is also proper when there is a threatening of carcinoma. These were the circumstances

that were attended to with such benefit in the cases alluded to.

For the reasons I have assigned, it is my duty to enter very fully into this subject, but I will give it in small and repeated doses, so that you will not be wearied with me. I may devote half an hour to it occasionally, while at the same time I attend to the common practice of the house.

CONTRIBUTIONS TO THE PATHOLOGY OF THE CHEST.

ULCERATION OT FHE LUNGS.

To the Editor of the Medical Gazette.

Sir,

As diseascs of the lungs are of vast importanee, and when we consider that no less than four distinct maladies, namely, ulceration of the larynx, chronic inflammation of the bronchia, pleura, and substance of the lung, may be, and frequently are, mistaken for true tubercular phthisis, I conceive any thing illustrative of these diseases to be acceptable, especially when it is obvious we can only obtain a more lucid knowledge of each, where their causes and naturc are more clearly pointed out. The diagnosis and prognosis, in the latter stages of these diseases, are alsc difficult: the former, from the sequel of each being analogous, that is, terminating in ulceration and suppuration of the substance of the lung; the latter, from its almost universal, but in some rare instances favourable termination.

The following is a case of ulceration of the body of the lung, originating from chronic inflammation, and in many respects highly interesting. I was assisted in the treatment and management of the patient by Dr. Turner, whose opinion of the case coincides with my own. I have endeavoured to contract the details of it as much as possible; and should you consider it adapted to the pages of your useful journal, its publication will oblige

Your obedient servant,

William Robbs.

South Terrace, Grantham,
Dec. 1, 1834.

Mr. S., aged 39, of sanguincous temperament, fair eomplexion, with light brown hair, rather above the middle stature, and possessing the appearance of having been a fine healthy-looking man. For some years he filled the situation of guard on one of the York coaches running to London. In the autumn of 1832 he was attacked with pneumonia; for this disease he was under the care of Dr. Balcombe, of York, from whom I received the following account:—

"Mr. S. has laboured for some time under a subacute form of pneumonia, which has yielded to repeated local bleedings and blisterings; this occurred some months ago. Within these last few weeks there has been a recurrence of the attack, but in a much milder form. The chief symptoms have entirely subsided, but there still remains a spitting of bloody matter, which shews some ulceration of the body of the lung, and it is of much importance that it should be watched."

June 5th, 1833.—At this time he went to Leamington, whcre he made use of the Leamington water and shower-baths. After this he spent two or three months in Leicestershire; from thence he eameto Grantham, without having received any relief. I was first called in attendance on the 4th of October, 1833. He then presented an emaciatcd appearance, had a troublesome huckling cough, and expectorated about a quarter of a pint of bloody mucus, mixed with purulent matter, in the twenty-four hours. His appetite was tolerably good, but he suffered great flatulency after a full meal, and his cough became more troublesome. The circulation of the blood was regular, the pulse never exceeding 96 in the minute. He complained of a burning pain in the throat, palms of the hands, and feet; a dull pain of the left side, with a very oppressive sensation at the pit of the stomach. Bowels costive; great lassitude; no chilliness; no night sweats; no hectic fever. His sleeps at night were short and disturbed; he was able to lie on the right side, but whenever he attempted to turn on the left, he eructated large quantities of gas, which he said smelt like the Harrowgate water. There appeared an unnatural bulging of the left side of the chest. On percussion and auscultation, the right lung performed its office naturally; the left, at its superior part under the clavicle, was dull; and on the application of the stethoscope, the mucous rattle was distinct. At the inferior and posterior part, the respiratory murmur was not distinguishable; more anteriorly, and

between the sixth and seventh ribs, just below the left breast, pectoriloquy was very distinct; and when the patient coughed, a gurgling noise was heard. He was ordered to apply the tartar emetic ointment to the affected side of the chest, and take the balsam copaiba, as recommended by Dr. Armstrong. He persevered in this treatment till considerable irritation of the skin was effected, as well generally as locally; but the symptoms continued unmitigated, and if any thing the expectoration increased in quantity, and became more sanguineous. Animal food appeared to exasperate the cough and expectoration; he was consequently ordered to discontinue it.

Oct. 24th.—He was much weaker; the pulse 86, and natural; the tongue slightly furred; desire for food not so great; and in other respects much the same.

℞ Quin. Sulph. gr. iv.; Conf. Aromat. q. s. ft. pil. ter in die. Emulsio Amygd. c. Tinct. Camph. Comp. tusse urgente.

27th.—He was stronger, and improved; the cough and expectoration continued; pulse regular and natural; bowels obstinate.

To have clysters administered as occasion might require. To continue the other remedies.

30th.—A small blood-vessel appeared to have given way in the substance of the lung; there was a considerable expectoration of mucus, mixed with fresh arterial blood; this produced very depressing effects on the patient, with profuse perspiration. The quantity of blood did not amount to more than between two and three ounces.

℞ Plumbi Superacet. gr. j.; Pil. Rhei Comp. gr. v. 6ta hora sumend.

31st.—The expectoration of bloody matter continued, but did not appear fresh; the patient had recovered from the depression he suffered yesterday; there was slight vascular excitement.

Pergat.

Nov. 4th.—The expectoration had become thinner, more in quantity, and slightly tinged with dark-coloured blood. He complained of his cough, a fluttering pain in his left side and pit of the stomach; also rheumatic pains of the left arm, which prevented him sleeping the fore part of the night. Appetite good; tongue clean; no evening exacerbations of fever.

℞ Pil. Opii, gr. j. h. s. sd. om. nocte. Pergat.

6th.—The bowels constipated; in other respects the same.

Sumat. Ol. Ricini, p. r. n.

10th.—The expectoration had increased in quantity, become thinner, and less tinged with blood; no fever; no night sweats; and in other respects much the same.—Pergat.

16th.—Slight ptyalism from the head; the expectoration amounted to nearly a pint in the twenty-four hours; complained of griping pains of the abdomen; bowels rather slow.

℞ Infus. Rosæ, c. Mag. Sulph. p. r. n. Continue other remedies.

17th.—He had thrown up several pieces of organized lymph in the expectoration, which continued very great, and the cough troublesome.—Pergat.

18th.—A large quantity of arterial blood had been voided by expectoration, amounting in quantity to about four ounces; it was fresh, and frothy. He was in a very depressed state: perspiration very profuse; surface of the body colder than natural; the action of the heart very feeble; pulse scarcely to be felt at the wrist, beating 64 in the minute; tongue and mouth moist. Complained of no pain; said he felt great oppression of the left side of the chest before the bleeding took place, and a very unpleasant smell in his breath. The bleeding came on as he lay in bed, without any apparent cause, and so very rapid as to leave no doubt of a large blood-vessel having given way.

Cont. Pil. ter die; ℞. Mucil. Acaciæ, ℥j.; Solut. Morph. Mur. ♏xv.; Pulv. Scillæ, gr. ij.; fiat haustus 3tia hora sumendus.

19th.—Had slept about two hours during the night; expectoration small in quantity, highly tinged with blood, but did not appear fresh; slight fever; pulse 90, and soft; had perspired during the night; tongue and mouth moist. On percussion, the left side of the chest sounded very dull. The stethoscope indicated the left lung much louder; the respiratory murmur could not be heard over the lowest part of the chest. There was a crackling noise (metallic sound), as if the air had escaped into the cellular membrane, between the lung and pleura; this was most audible at the

upper part of the chest. Pectoriloquy was not distinguishable.

To continue the pill and draught every eight hours.

20th.—Had slept at intervals during the night, and surprisingly rallied. The expectoration was reduced to about four ounces in the twenty-four hours; it was more purulent, and less sanguineous. Pectoriloquy was again distinctly heard over the space between the sixth and seventh ribs, just before their angles.

Ordered a seton to be placed over the part where the voice was so distinctly heard.—Pergat.

29th.—Complained of unusual heat over the left side of the chest; much griping pain of the abdomen; the gums were swollen, and very dark coloured. The seton discharged healthy pus. The expectoration continued very abundant, containing large quantities of purulent matter, slightly tinged with blood.

Ordered a fold of linen rag, moistened in Spirit Lotion, to be constantly applied over the affected side of the chest. —Perstent omnia.

Dec. 6th.—He had improved; the expectoration continued very abundant; the cough short, and chiefly in the morning. The application of the spirit wash was very grateful. His appetite was good, and diet chiefly confined to nourishing fluids. The circulation of the blood natural; tongue clean; the bowels sluggish; no night sweats; no hectic. The seton produced a good discharge of healthy pus.—Pergat.

16th.—The expectoration still continued, occasionally tinged with blood; colic pains of the abdomen from the head; in other respects he has improved, and gained flesh.

Omit. Pilulæ. ℞ Pil. Opii, gr. iij.; st. sd. et repet. om. nocte.

1834, Jan. 2d.—Colic pains of the abdomen had been very severe at intervals since last report; the expectoration had increased, being not less than a pint in the twenty-four hours, and become more purulent. On percussion over the left side of the chest, under the left breast, more sonorous; over the upper and lowest parts of the chest, more dull. On the application of the stethoscope, the cavity appeared enlarged, pectoriloquy being much more distinct, and heard over a more extended surface; the respiratory murmur over the other parts of the chest dull, and at the posterior inferior part not to be heard.

Jan. 17th.—For some days past he had complained of a dull heavy pain, and unnatural heat in the left side; had not rested so well at nights; cough troublesome, more deep, and sonorous; the expectoration not quite so much in quantity; the pulse 86, and regular; tongue clean; bowels kept open by enemas.

During the evening he was suddenly seized with expectoration of blood, and the course of a quarter of an hour voided about four ounces of frothy arterial blood; this produced a great state of collapse; pulse scarcely to be felt; surface of the body much colder than natural, and covered with a clammy sweat. Said since the bleeding had taken place, the dull heavy pain had ceased.

To continue the application of the lotion, and take alum whey at pleasure. ℞ Pulv. Kino. Comp. c. Opio.; Pulv. Aluminis, aa. gr. v. M. ft. Pulv. 2da hora. ℞ Infus. Rosæ.; c. Magnesiæ Sulphatis quarta quaque hora.

12th. — Slept but little during the night; expectoration trifling, and very sanguincous; skin moist, and warm; tongue furred; pulse 96, and rather sharp.

Contr. Pulv. ter die, et Mist. om. mane.

15th.— Has improved in every respect. Expectoration less in quantity, very purulent, and slightly tinged with blood.—Perstet.

Feb. 10th.—His general appearance was much better; he had gained flesh and strength. The expectoration had decreased to nearly half a pint in the twenty-four hours.—Pergat.

March 16th.—He appeared going on well till within a few days, when he complained of a dull heavy pain in the left side; expectoration performed with pain, and slightly tinged with blood; heat of the left side of the chest greater than natural; pulse 86, and irritable; tongue moist, and furred in the centre; no night sweats; no evening exacerbations of fever.

Fiat V.S. ad f. ℥vj.—Pergat.

20th.—Since last report there had been an increased expectoration, mixed with dark-coloured blood, and it had the appearance as if a fresh abscess had given way. The heat and pain had

diminished; and in other respects much the same.

Applicetur Empl. Lyttæ lateri sinistro. Pergat.

April 1st.—Suppuration of the lung appeared considerably increased; constitutional symptoms still continue slight. A small blood-vessel gave way about noon, after which he expectorated about three ounces of blood, mixed with pus; considerable collapse followed, but not so great as before.

To continue the application of the lotion. ℞ Liq. Morph. Mur.; Tr. Ferri. Mur. aa. ♏xl. Mist. Camph. ℥iss. ft. haust. statim sumendus. ℞ Infus. Rosæ, f. ℥iss.; Solut. Morph. Mur. ♏x.; Tinct. Lavend. Comp. ♏xxx. fiat haustus quarta quaque hora sumend.

2d.—The expectoration continued tinged with blood; there was slight fever; and in other respects he was better.

Repet. Haust. ter in die; Cont. Lotio ut antea.

25th.—He complained of a great load over the left side of the chest. The expectoration had not been so free for two or three days; it was slightly tinged with blood, and a coagulum appeared in the sputa.

℞ Tr. Ferri. Mur. ♏x. ex cyatho aquæ frigidæ 6ta quaque hora, capiat. ℞ Solut. Morph. M. ♏xlv. Mist. Camph. f. ℥iss. h. s. sumend.

26th.—The expectoration and fresh blood continued, notwithstanding he had slept during the night. He had more vascular excitement than I ever observed him to have before.

Fiat V. S. ad f. ℥vi. ℞ Tr. Ferri Mur. ♏xxx. 3ta horâ.

The bleeding appeared to have been hurtful: the hæmorrhage increasing very rapidly during the day, he took a large quantity of the tincture, which caused him to be very sick and faint.

℞ Solut. Morph. Mur. ♏xxv.; Liq. Plumb. Subacet. ♏x.; Acidi Acetici, f. ℥ss.; Aquæ, f. ℥iss. fiat haust. hora somni sumendus.

27th.—Had had a disturbed sleep during the night. In the morning there was no fresh blood in the expectoration; the skin was moist; slight increase in the temperature of the body; pulse 96, and weak; tongue moist. He complained of no pain.

Cont. Haust. nocte maneque. Persistent alia.

May 1st.—The expectoration had increased to nearly its former quantity, but free from blood. He was very weak; his appetite good; no hectic; the lead appeared to be acting upon the system.

Cont. Haustus hora somni.

19th.—The cough and expectoration continued; in other respects he had improved.

Ordered a caustic issue just below the left breast.

May 24th.—The issue discharged healthy matter, and he complained of it causing great heat over the left side of the chest. The expectoration was perceptibly less, but in quality the same.

Pergat.

27th.—For some days the expectoration had been considerably less, but very purulent; great dulness, oppression, and unnatural heat, over the left side of the chest; complained of having a disagreeable smell in his breath, like fresh earth, and said he had the same before the bleeding took place last time. Had not rested for some nights; pulse 96, and rather sharp; tongue covered in the centre with a white fur. About 8 o'clock in the evening, while his wife was changing his shirt, he felt the sensation as if hot water was pouring in the chest, and suddenly commenced expectorating very rapidly arterial blood, till from eight to ten ounces were voided. On my arrival he was in the greatest state of collapse, with the surface of the body covered with profuse perspiration; his hands, feet, and face, were quite cold; the pulse not to be felt at the wrist; the contraction of the heart very feeble: he could scarcely articulate, but motioned his hand to the chest, as the seat of all his distress.

To drink freely of Alum Whey, and continue the constant application of the spirit lotion. Cont. haustus 4ta hora.

28th.—Skin warm and moist; had laid very quiet during the night, but not slept; pulse 100, and very feeble; tongue and mouth covered with viscid mucus; expectoration continued tinged with fresh blood.

Pergat.

29th.—He had coughed up a large quantity of matter, very sanguineous; there was a disposition to fever last night; pulse 96, and very feeble; mouth and tongue more moist, and cleaner; urine small in quantity, and very thick; bowels relieved by clysters.

Remedies to be continued.

30th.—Had slept during the night; in other respects much the same.

Pergat.

June 29th.—Since last report he had gone on improving very slowly; he was not able to walk alone, and scarcely stand; the expectoration had continued varying in quantity, and always of a very purulent quality. There had been very trifling or no disturbance in the vascular system; the pulse continuing about 86 in the minute; the bowels torpid without medicine or clysters; no night sweats; no sickness; and the appetite continued good.

Cont. haustus omni nocte.

July 8th.—Called up, 4½ A.M. He had expectorated about four ounces of fresh arterial blood; he presented the same appearance as on the 27th of May, but the state of collapse was not so great. He had been excessively sick from the commencement, and vomited a large quantity of vitiated bile. To apply the spirit lotion as before.

℞ Plumbi Acet. gr. ¾. Pulv. Opii, gr. j. fiat pil. 4tis horis sum.

9th.—The expectoration of fresh arterial blood continued, but not very rapid. He complained of much uneasiness in the left side of the chest; pulse 76, and very feeble; the surface of the body cool, and covered with moisture.

Perstet.

14th.—There was no fever; he rested well at night; pulse 86, and stronger; tongue and mouth moist and clean; the expectoration continued very sanguineous, but not fresh. He had been taken several times with a difficulty of breathing, and as if he should be suffocated; said he felt as if there was something placed in the air-passage, which he was unable to expectorate. He has, since last report, expectorated several large pieces of organized lymph, in appearance similar to the lining membrane of the bronchia.

℞ Zinci Sulph. 3ss. in aquæ tepidæ lb. ss. Statim sumend. P.

18th.—Had had several paroxysms of difficulty of breathing; expectoration much less in quantity, and contained large pieces of lymph: from their appearances, I believe it to be the lining membrane of the abscess.

To repeat the emetic, and take an anodyne draught every night.

25th.—He had lost the heat of the left side of the chest; respiration more natural; appetite good; his general appearance much improved. He continued occasionally to cough up pieces of lymph; the expectoration was nearly all mucus, and in quantity not amounting to more than two ounces in the twenty-four hours.

To continue the draught every night.

August 10th.—Since last report he had expectorated very little, and that mucus. There appeared great contraction of the left side of the chest; his appetite, health, and strength, had improved surprisingly. When he used any exertion, it produced great perspiration and faintness.

To take increased nourishment, and a draught as occasion may require.

From that time he rapidly recovered. I examined the chest on the 29th of November, and found the left side much contracted. Pectoriloquy was not distinguishable; the respiratory murmur more distinct; and in other respects the respiration was natural.

A similar case to the preceding occurred in my practice in the autumn of 1831: to detail it, would be merely a repetition. The subject was that of a pauper, and he was seen by several medical men in this place, as well as by Dr. Hodgkin, of Guy's Hospital, when the poor man, finding his cure almost hopeless, was induced to seek relief. I believe, by all these gentlemen, as well as myself, he was considered to be labouring under tubercular phthisis; there being very distinct pectoriloquy, with profuse expectoration of purulent matter. There were evening paroxysms of fever, and great perspiration during his sleep in the morning, the only favourable symptom being the want of vascular excitement. This case also terminated by the expectoration of a large portion of organized lymph,

which the man placed in spirit of wine; and there was, in my mind, no doubt of it having been the lining membrane of the abseess. After the expectoration of this membrane, the patient's ehest eonsiderably contracted, and he rapidly reeovered his usual health. The last time I saw this poor man, he was able to get his living by daily labour.

Remarks.—By the assistance of that simple, but most useful instrument, the stethoseope, I was enabled, from the first, to distinguish the preeeding eases from ehronic bronehitis; peetoriloquy, which in both instances was very distinetly heard, together with the history and other symptoms then present, left no doubt but that ulceration of the lung, to some extent, had already taken plaee. But whether that ulceration had taken place from the inflammation having called into existence tubereles, or excited those which might have already existed into aetive action, or whether the continuanee of the inflammation had created an abseess in the substanee of the lung, and so produced ulceration, was a question of vast importanee in our prognosis, and one not easy to decide. In all eases where there exists a vomica or imposthume in the body of the lung, there requires considerable caution in our prognosis; since, in the greatest number of cases, where there existed aetive uleeration with loss of substanee, they have generally terminated fatally; and this has been ingeniously aeeounted for in eonsumption (and I presume it holds good in this form of the disease also) by Mr. Bodingford, who states it to be owing to the destruetion of the cartilaginous matter in the lung. How far this may be the ease I do not know, but I think it quite as plausible that the fatality of uleeration and suppuration may depend on the loose texture of the lung, and the great tendency the pus has to extravasation. I believe it is difficult, and sometimes almost impossible, to distinguish in the advaneed stages of uleeration and suppuration of the lung from inflammation, between it and tubercular phthisis. There was some difficulty in eoming to a direct diagnosis in the preceeding ease. The cough was short, tickling, and the expectoration slight, exeept early in the morning; there was great emaciation; the sleep was frequently disturbed; and some nights he was tormented with horrid dreams. But he had no night sweats, no coneomitant heetie, no frequent change of the eountenance, which are always present in true tubercular phthisis; and above all, the pulse never ranged more than 96 in the minute. This last symptom has been partieularly insisted on by Mr. Maclure, as assisting in our prognosis, in a paper published in the 13th volume of the Medical Gazette. But that gentleman relates his as a true case of tubercular phthisis; I consider it a symptom of importance in our diagnosis of ulceration without the presence of tubercles. We had also considerable redness and heat about the upper part of the pharynx; but this I have frequently observed in true phthisis.

As the ease advanced, it became more doubtful whether tubercles were not present. There was on the 20th of March a sudden expeetoration of matter mixed with very dark-coloured blood, as if it had just been evaeuated fresh from an abseess. Previous to this he complained of more heat and oppression than eommon over the affeeted side; but what was most to have been expeeted was shivering, sickness, irritative fever, and vaseular excitement. The absence of these symptoms eonstituted one peculiarity of the ease. The frequent diseharge of blood shewed that the uleeration was progressive, and that the blood-vessels themselves were enveloped in the disease. The frequent and large quantities of blood whieh were voided, without producing great eonstitutional iritation, I think is unpreeedented. It cannot be surprising that my learned friend, Dr. Turner, as well as myself, should have been mistaken in our prognosis, if we take into eonsideration that on the 26th of April and 11th of May, we left the patient in a state of eollapse, from whieh we could scareely expeet him to rally.

Abseess of the lungs, originating in ehronie inflammation, generally terminates speedily and fatally. Dr. Armstrong has related two eases where the disease was attended with symptoms, and put on the eharacter, of an irregular ague; uleeration of the lung not having been suspected during the life of the patient. The preceding ease admits a question whether tubercles were first excited, and softened down in the usual

way, or whether two or more abscesses were formed from the continued inflammation. I am inclined to agree with Dr. Turner in thinking that the latter was the case; otherwise we should have had greater constitutional derangement, and consequently the disease have proved fatal.

I attribute the favourable termination of both cases to the formation of organized lymph, which seemed to have been the barrier to the further progress of the disease. The expectoration of this adventitious membrane, and the contraction of the affected side, were favourable to the patients' recovery.

In the treatment of both cases the patients were ordered to be kept in a warm room, never below 65°, and to live principally on suction. The superacetate of lead in each was given to a considerable extent. I question its beneficial effects. The muriate of morphia is decidedly to be preferred to opium, in allaying nervous excitement, without producing the severe headache and constipation which the latter remedy is apt to do. Throughout the case the bowels were obstinately constipated; probably owing to the liver sympathising with the affection of the lungs. The first venesection appeared to prevent an attack of the hæmorrhage: the blood contained a large quantity of serum, and the crassamentum was both cupped and buffed; the second abstraction of blood was decidedly injurious. The application of external irritants was not attended with that manifest relief I anticipated.

The application of the spirit lotion, as recommended by Dr. M. Hall, in the 13th volume of the MEDICAL GAZETTE, was particularly grateful to the patient: and although it possessed considerable influence in checking the hæmorrhage, yet it did not prevent its returning. I have frequently found this latter remedy, when applied as recommended by Dr. Hall, a great acquisition in the treatment of hæmoptysis and incipient phthisis: it doubtless deserves the attention of the profession.

W. R.

Grantham, Dec. 4, 1834.

CASE OF MALFORMATION OF THE HEART.

To the Editor of the Medical Gazette.

SIR,

I BEG leave to forward you the following account of a very unusual malformation of the heart which lately presented itself to my observation, in order that it may be made public through the medium of your valuable journal, should you consider it sufficiently interesting.

I am, sir,
Your obedient servant,
JOHN C. BLOXAM.

Newport, Isle of Wight,
December 8th, 1834.

Fanny B—, the sufferer under this curious structure, died at three years of age, very much emaciated, and smaller than many children only one year old. On opening the chest, the heart was immediately seen, of an enormous size compared with the growth of the child, lying transversely in the chest, with the auricles quite on the right side. The right auricle was greatly distended with blood, and in this state the heart was full three inches from apex to base, and of a corresponding breadth. The aorta, which contained venous blood, was disproportionately large, but otherwise of normal structure: the pulmonary artery, on the other hand, was so small as entirely to escape observation at this stage of the examination. The right auricle, the largest and most hypertrophied of the four cavities, was, in every respect, in the highest state of development; and the left, in the lowest. The parietes of the right ventricle, at their thickest part, measured one quarter of an inch, and those of the left nearly half an inch: the muscular fibre was firm, and the valves naturally formed. The foramen ovale, instead of being obliterated, would have admitted a goose-quill, but retained its valvular form sufficiently to render its temporary closure practicable. The aorta took its origin equally from both ventricles, and communicated as freely with one as with the other. The pulmonary artery opened only from the right ventricle; its parietes were extremely thin, and it was altogether so diminutive that its existence was discovered only by tracing its branches backwards from the lungs: it was there

perceived on the posterior surface of the heart, collapsed, and bifurcating immediately on its exit, so that the trunk was not, in any part of its circumference, above a line in length: hence the case might have been liable to have been mistaken for one of total deficiency of the pulmonary artery.

A short history of the case during life will perhaps prove acceptable. Some days after its birth, the child was observed to be unusually dark, and this colour gradually became deeper. When about two or three weeks old, she was attacked with convulsive movements of the muscles of the face and arms, which recurred at shorter and shorter intervals, and were subsequently attended with great restlessness and uneasiness, an aggravation of the dark colour of the skin, and loss of sight. Any circumstance that excited or irritated the child was found to occasion these "fits", (as they were termed), and for some months previous to her death, she was, for the most part, in an extremely restless and uneasy state, with occasional intermissions, which bore all the appearance of approaching dissolution.

ANATOMY OF THE MEDULLA OBLONGATA.

ANSWER TO MR. MAYO'S OBSERVATIONS.

To the Editor of the Medical Gazette.

Sir,

Allow me to address to you a few words, in answer to Mr. Mayo's observations, in the last number of your journal, on my uncle's, (Sir Charles Bell's), last paper to the Royal Society, describing several new and highly-important points in the anatomy of the medulla oblongata.

Mr. Mayo has broadly denied his facts. He is well aware, from the general tenor of Sir Charles Bell's conduct towards him, on former occasions similar to the present, that he will not make any answer to his strictures.

Notwithstanding the numerous attacks which Mr. Mayo has lately thought proper to make, through the medium of your journal and otherwise, upon the character of Sir C. Bell as an anatomist and physiologist, Sir Charles's conduct towards him in this hospital, as his colleague, has been uniformly marked by the most scrupulous politeness; and I take this opportunity of stating, that I have never known him, even under the most trying circumstances, to express the least disrespect towards Mr. Mayo, either by word or deed, in the presence of any of the pupils, or on any occasion, at the hospital, to allude to Mr. Mayo's claims as a physiologist. Mr. Mayo's conduct has been different, and such as to lead me, however unwillingly, to break through the rule I had laid down for myself on being appointed to an official situation under him, never, while I held that office, to enter into any discussions on the subject of his pretensions to my uncle's discoveries in the nervous system.

The other day, in the dead-house, in the presence of a number of pupils, Mr. Mayo asked me if I had seen the paper above alluded to. I said I had. "Well," said he, holding a portion of recent brain in his hand, "a decussation or union of the posterior columns of the spinal marrow is there described." "There is no such thing." "I will show you;" and he proceeded to separate the posterior columns with the scalpel. I told him I had both seen and made the dissection, and knew its delicacy and difficulty; and that it was impossible to show any thing, either one way or another, on the soft brain. He then asked me if he was dividing any thing, and proceeded in his demonstration. I answered, that he was separating the lamina of the septum, which, if he dissected carefully, on a well-hardened brain, and followed downwards to its termination, he would readily find the decussation. He answered, "Exactly, but I have been familiar with the hardened brain ever since I entered the profession, and have often looked for a decussation, and know that no such thing exists."

Now it was evident to me that he did not even know the septum which was to lead him to the union of the columns, and without a careful dissection of which it was scarcely possible that any man could discover the decussation. And I understood the plain English of this public demonstration, directed to me, in my own den, as it were, to be—your uncle and master is a fool, and a visionary; and you were deceived when you thought you saw it, and I now call upon

you to confess it. This sort of demonstration was publicly repeated in a triumphant manner to Sir Charles Bell's apprentices and more immediate pupils, and more than once to myself, so as in a manner publicly to call upon me to answer his objections.

If the decussation of the anterior columns, which nobody now thinks of denying, was a matter of dispute among anatomists for twenty years, we cannot be surprised that Mr. Mayo should not have succeeded, in the one short week that the paper alluded to has been before the public, in finding that which has been described in the posterior columns; confessedly a much more difficult piece of anatomy, even if he used hardened brains instead of recent ones, and more especially if he has not followed the method of dissection pointed out by the discoverer. But I confess I am surprised to find him already thus positively denying its existence. On the tone in which this denial is made, every one can make his own comment. Suffice it to say, however, that I have made a dissection of this part, and, as the Hunterian museum is at present closed, have sent it to the museum of the University of London, that every one may have an opportunity of comparing the evidence of his own senses with that of Mr. Mayo.

The mode of making the dissection is this:—a portion of brain that has lain for several months in strong alcohol must be taken; for we are again and again informed, in the course of the paper, that without this requisite it will be in vain to attempt to follow the dissections described. An incision, with a fine knife, is to be made through the outer pellicle, on each side of the calamus scriptorius, and a lamina of transverse fibres, about as thick as paper, can then be separated from the longitudinal fibres of the sensative columns. When this is separated on each side, it looks like a sort of partition wall between the two columns; and when traced downwards, it is found to terminate abruptly at a point corresponding to that at which the anterior columns commence their decussation on the opposite side. Just below where the septum terminates, bundles of fibres may be seen to pass from the one posterior column to the other.

Since I have noticed Mr. Mayo's denial of Sir Charles Bell's facts, which forms the first part of his letter, it may be well also to notice the addenda, comments, or whatever they may be called, which form the latter half. The tone in which they are written, I have already said, I will leave to the judgment of others.

"There is a point in the anatomy of the anterior pyramids," he says, "with which he (Sir C. B.) is evidently unacquainted, that accounts sufficiently for the pathological phenomenon" (viz. the loss of sensation, as well as of motion, on the side of the body opposite to that on which the brain is affected.) "The lower terminal fasciculi of each of the anterior pyramids are not continued into the anterior *fasciculi* of the opposite half of the spinal marrow, but plunge into its *centre*, and therefore should be expected, if they are the route of the *decussation of symptoms*, to cause the loss of *sensation* in the parts supplied by the spinal nerves, no less than the loss of motion."

I believe I know to what "point of anatomy" Mr. Mayo here alludes: it is a sort of knob, or union, between the anterior and posterior columns of the same side, which Sir Charles Bell pointed out to me some months ago, among many other curious points of anatomy in this interesting region, as resting for future investigation. But how the plunging of the fibres of a *motor* column into the centre of the spinal marrow (I know not what part is meant by this expression), or any where else, could account for *sensation* being lost on the side of the body opposite to that on which the brain is defective, I profess I cannot understand.

Again, Mr. Mayo has chosen to go out of his way for the purpose of criticising the engraver; for though a single false line does give the spinal accessory the appearance of arising from a wrong place, it is in the plate only an accessory, and has nothing whatever to do with the demonstration.—I am, sir,

Your obedient servant,

CHARLES W. BELL,

House-Surgeon to the Middlesex Hospital.

Dec. 21, 1834.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

Cours complet d'Histoire Naturelle Médicale et Pharmaceutique, ou Résumé des divers traités concernant l'histoire, la description, les propriétés, et l'usage des substances medicamenteuses, tirées des trois Règnes. Première Livraison. Dulau.

THE progress of natural history in each of its three kingdoms, and more particularly the great advances made in the several sciences collateral with medicine, of late years, have thrown open a vast field for the labour of compilers, though we have not found that, in general, they have hitherto availed themselves of the opportunity. The present work, which is just begun at Brussels, gives fair promise of supplying what medical readers must have long felt as a desideratum—a well-arranged compilation of the objects of materia medica. A considerable portion of the animal part is already completed; and for this purpose the *Règne Animal* of Cuvier is largely laid under contribution. Among the other treatises mentioned in the preface as affording ample fund of information in their several departments, we observe Dumeril's *Traité elementaire*, Richard's *Botanique Médicale*, Drapiez's (who, by the way, is the editor) *Manuels de Chimie et de Mineralogie*, various articles from the two great dictionaries, *D. des Sc. Med.* and *D. des Sc. Naturelles*, and the numerous productions of Barbier, Milne-Edwards, Rattier, Levasseur, Chevalier, Alibert, Lesson, &c. With such resources the Brussels *resumé* cannot but prove a most desirable acquisition for every class of medical men, practitioners, teachers, and *litterateurs*, as well as for students.

Judging from the portion of the work now before us, we should say that most probably it will be well executed: when we have further acquaintance with it, so as to be enabled to form a more definite opinion, we shall speak more positively. The plates are excellent lithographs, of royal octavo size, and will amount to 150 in number. The letter-press will occupy two octavo volumes, in double columns. The price besides is exceedingly moderate, so that in every sense economy, as well as utility, is primarily consulted.

Des diverses Méthodes pour l'Oblitération des Artères, par LISFRANC; *De la Reunion immédiate des Plaies*, par SANSON; *Memoire comparatif sur l'Hist. Nat. de l'Insecte de la Gale*, par RASPAIL. Dulau.

THESE three productions have just issued from the Belgic press, forming a pocket volume. It is rather a curious collection. The first two, however, have some relationship, being the offspring of the late concours in Paris; but the third might certainly have better made room for the thesis of some other competitor, such as Blandin or Velpeau: as it is, perhaps Raspail's memoir constitutes the principal attraction. It is printed verbatim from the Paris copy, and accompanied by the lithograph plate. By the way, touching the said itch insect, it is a very extraordinary fact that none of our observers have succeeded in detecting it, notwithstanding the minute directions given for the purpose by Raspail and others. From Moufet's remarks in his Theatrum, it would seem that *he* had some personal acquaintance with the *Sarcoptes hominis*, and so perhaps had Sir Theodore Mayerne, as he seems to insinuate in his preface, dedicatory to Moufet. But since that time, three centuries back, nobody has succeeded, in this country, in the detection of the parasite. Baker, Canton, Willan and Bateman, Adams, Heberden, J. Hunter, and numerous others, have failed. We happen to know of some late attempts to find the animal, but they have not been attended with the least success. Is it not likely that the itch in this country is not accompanied by the insect—or that at least the animal is not present in every kind of itch?

Anatomischer Atlas des Menschlicken Korpers, in 84 *Tafeln und erklärendem Texte.* Von Dr. M. J. WEBER, Professor zu Bonn. Schloss.

THIS magnificent work is now complete, the sixth and seventh parts having just been received in London. Among the objects represented in the sixth *lieferung*, we find the vessels and nerves of the

anterior portion of the system, including the brain, spinal marrow, and the *nervus sympathicus* in situ; the lymphatics, the thoracic aorta, the abdominal vessels, with reference to hernia, &c. In the seventh, the posterior portion of the frame is exhibited, with special regard to the vascular and nervous systems; and among other plates, we observe one representing the descent of the testicles through the rings, and another giving the chief objects in general anatomy. Sir Astley Cooper's work on the Testicle is laid freely under contribution for the former. The Atlas, on the whole, must be seen and examined, in order to be appreciated: mere description might run on to any length, and yet totally fail in conveying an adequate idea of the production.

MEDICAL GAZETTE.

Saturday, December 27, 1834.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

ALLEGED NEGLECT AT HOSPITALS.

THERE are some subjects which our contemporaries take up as never-failing topics of declamation, and on which they ring the changes every time they are at a loss for "a leader"—we mean the abuses which they allege exist in our hospitals. First we are told, that the officers ought to be elected by *concours*, after the manner of France, where the said concours excites more jealousies, more clamour, and more editorial bile (if possible) than the election by canvass and voting among us. Next, we are informed that the business of our hospitals is very badly conducted; that every thing is done in *holes and corners;* that the only object is to cheat the pupils, first out of their money, and then out of their opportunities of acquiring knowledge. Again, we are given to understand that the patients are looked upon as mere pieces of matter, fit to undergo a certain set of experiments; and that they are frequently "murdered" (we use the language of one of our fraternity) for the edification of the physician or surgeon in attendance.

We have often endeavoured to solve the problem, do the writers really believe what they assert?—but we have never come to a satisfactory solution of the difficulty. Mr. Wakley, indeed, the most outrageous of the scribes in question, and who especially treats his readers with stories of "blood," it is notorious, dare not shew himself within the walls of any hospital in London (excepting always that of the *University*), and, neither knowing nor caring about the matter, evidently writes just what suits his purpose at the moment, and can get up a case for his journal and the newspapers, such as shall make the reader's hair stand on end, without any trouble to himself, though certainly, in many instances, it must be added, without the slightest regard to truth, or even to verisimilitude. This is his peculiar province, in which he stands unrivalled among the writers of fiction; but there are other points in which he is followed by those who ought to know better: for instance, there is a constant cry in the periodicals that pupils are neglected at the hospitals. If there be any hospitals where this is the case, either generally or with respect to individual officers, let them be named; but do not let sweeping charges be indulged in, which, taken as of general application, we most positively and explicitly deny. We challenge the parties in question to come to particulars. Let them give time, place, and person, and we shall know how to deal with them.

The time which the pupil can spend in the hospital, especially during the winter, is very limited, owing to the number of lectures which he has to attend, and probably does not exceed two hours —viz. from 12 to 2, or from half-past

12 to half-past 2; but during this period we know that, at the principal hospitals, every facility is afforded him of visiting the patients with different physicians or surgeons in succession; and if there be any instances in which those gentlemen are not willing and anxious to impart instruction, certainly these constitute exceptions to the general rule. Again, notes of the cases are kept, which are open to the pupils; and in some hospitals, cards are placed at the head of the beds, with every prescription written upon them. The pupils in succession are employed by the physicians as clerks, and by the surgeons as dressers (the former without any additional charge.) In those cases which end fatally, public examinations, without disguise or concealment, take place; and lastly, clinical lectures, or bed-side remarks, are made, so as to impress upon the student the chief points deserving his attention. What, then, would our contemporaries have? It is easy to find fault where criticism is a profession, and where the object is to write *about it, and about it*, to fill up a certain space. There can be no doubt that there was formerly much ground for complaint; but they who deny that very great improvement has taken place, are either very ignorant or very uncandid. True, if there were more time in which to conduct the hospital visits, they might be done better; but while the time is so limited, we doubt very much whether more can be effected to aid the studies of the pupil than is already in operation.

One injury, and a great one, done by those who cry out for "reform" in our hospitals, is, that they lead the pupil to suppose that he has nothing to do for himself, but that all is to be done for him; that if he does not learn, the fault is his teacher's, not his; that he may walk through the wards with his eyes half-shut, without looking and examining, and noting and reflecting, for himself. The hospitals of former times produced John Hunter, and Cline, and Abernethy; and are St. George's, or St. Thomas's, or St. Bartholomew's, in any respect inferior as schools now, to what they were when those great men were students? Are they not, on the contrary, in every respect very greatly superior, in the opportunities and means of instruction they now afford? But these men had eyes, and hands, and heads, which they used for themselves. Let not students of medicine or surgery be deceived, then: the hospitals afford them invaluable *opportunities;* let them only give their attention with a willing mind to the cases, and listen with a candid temper to their teachers, and we are confident they will find every day add something to their stock of knowledge. "Nulla dies sine linea," was the maxim of a great artist of antiquity, and we can recommend none better to imitation at the present day.

ENCOURAGEMENT GIVEN TO ANATOMY IN FRANCE.

We are constantly referred by the writers above alluded to, to the usages of France as fit objects of imitation, and as contrasting strongly with our institutions here. What will our readers think when we inform them, that, by recent decrees, the privilege of conducting dissections is limited to two establishments (viz. le Clamart (?) and the Ecole de Médecine;) while, with regard to autopsies, the physicians to the hospitals *are prohibited from opening more than one body out of every three!* a pretty pattern for imitation, truly.

FRENCH MEDICAL GRADE AND THE *CONCOURS*.

Circumstances have just occurred in Paris, which place in a strong light at once the jealous distinction of grade, and the warm feeling in favour of the

concours, entertained by the most distinguished professional men in that metropolis. The place of surgeon in one of the hospitals having become vacant, a physician in the same establishment was exerting his interest to obtain the nomination; but the surgeons of the Central Bureau immediately protested against the proceeding, and petitioned the Minister of the Interior on the subject. "It is contrary to all precedent," they say, "that titles should thus be transformed;" and they quote the law which allows medical men to be transferred from one appointment to another, but only *in the same quality:* the physician, in fact, even though he be a Doctor of Surgery, must still remain a physician, while attached to the same hospital: by the concours alone can he obtain a surgeoney.

The protest against violating the law of the concours is signed by MM. Dupuytren, Berard, Dubois, J. Cloquet, Roux, Breschet, Velpeau, Richerand, &c.; and we must say, that we have seldom observed a measure, emanating from our Parisian brethren, more unanimously or more respectably supported.

FATAL INADVERTENCE IN PRESCRIBING.

A CASE was tried last week before the Correctional Chamber of Paris, involving a serious charge of homicide by imprudence. A medical man was called in to a child, three years and a half old, who was suffering under fever. A prescription was written, in which it was intended to order for a lavement eight grains of *sulphate of quinine*, with a few drops of laudanum. But the prescriber having just previously been engaged in a warm conversation with a medical friend concerning *acetate of morphine*, inadvertently wrote down that potent drug, instead of the quinine, in the prescription. The apothecary who dispensed it did nothing towards rectifying the error, except reducing the quantity to five grains. Scarcely was the lavement administered when the child experienced a sinking sensation; the skin became of a violet hue, and was covered with large drops of perspiration. Convulsions ensued, and death with great agony in a few hours. The Court severely censured the conduct of the apothecary for making up a prescription so palpably incorrect; but, owing to the mitigatory circumstances, the accused prescriber was let off with a fine of 600 francs, and costs.

PATHOLOGICAL LECTURES,

Delivered in King's College, London,

BY

PROFESSOR MAYO, F.R.S. &c.
Surgeon to the Middlesex Hospital.

VIII.—*The Voluntary Muscles—Tendons—Bursæ Mucosæ—Filamentous Tissue—Aponeuroses—Adipose Tissue.*

I. *Of the voluntary muscles.*—The higher endowments of the voluntary muscles open a new field in pathology: we have to study in them, not only the changes of structure which their tissue displays, but the alterations or modifications of their properties and functions, which are liable to occur without any visible deterioration of texture.

The voluntary muscles are liable to palsy, which may affect, either their sensibility, or their motion, or both. The first case is termed anæsthesia. When met with (and that is rare) it is combined with loss of cutaneous sensation, and is confined to the extremities. The second case is of more frequent occurrence: it is met with, for instance, in the paralysis which attacks one side of the face. The combination of the two is frequent, and occurs of every degree, from numbness and weakness to total insensibility and powerlessness. The voluntary muscles are liable to be the seat of pain: thus, in cancer of the breast, muscular pain is often felt at the insertion of the deltoïd, at the elbow, and in the back. The voluntary muscles are liable to be thrown into involuntary action. This state is called cramp, or spasm: its duration is either instantaneous, or of longer continuance. Ordinary cramp of the gastrocnemii and of the muscles of the great toe, bears the latter character; so does the spasm in locked-jaw, tetanus, cholera. Of the former kind of spasm I recollect a remarkable instance: a workman had struck a chisel through the lower tendon of the rectus; three or four days afterwards, spasms began, which in a short time recurred once or twice in a minute;

in them the leg was suddenly raised, with the knee straightened.

The affections which I have thus enumerated belong, however, rather to the nerves than to the muscles; not the pain only, but the spasmodic action likewise. When tetanus has been produced in animals by affecting them with strychnine, the spasm is found to be temporarily suspended upon making pressure upon the spinal marrow.

The transition from these affections to changes of structure in muscle, is found in the permanent and rigid contraction of the sterno-mastoïd, which causes and constitutes wry-neck.

The alterations, which the texture of voluntary muscles is liable to undergo, are the following:—

a. When a muscle has been divided, it may reunite in one or other of two ways—according as the skin covering it is torn and remains ununited, or otherwise. In the first case, the reparation of the muscle is preceded by inflammation and suppuration: from the inflamed surfaces lymph is poured out, which coagulates, and, adhering to it, becomes organized, and forms granulations. The latter growing by fresh exudation of lymph, fill the vacuity caused by the retraction of the torn fibres. The organized medium of union subsequently contracts, and the divided ends of the muscle are drawn towards each other, and finally become directly reunited. In the second case—namely, when the skin is entire, and inflammation, suppuration, and granulation do not take place—the medium of union is infiltration of the cellular tissue surrounding the torn muscle with lymph, which forms a kind of callus that becomes organized, and finally contracts, like the uniting substance that proceeds from inflammation. The soft texture of muscle is easily cut through, or lacerated. It has been ruptured by its own action, and, in the instance of the abdominal muscles, by a bruise which has not torn the skin.

b. The voluntary muscles are liable to hypertrophy. I saw in a young woman the tongue enlarged to five or six times its natural size, which, projecting permanently from the mouth, had caused the corners of the mouth to ulcerate.

c. The voluntary muscles are liable to atrophy. This proceeds either from age or from disuse. In the first case, the muscular fibre becomes paler, and thin layers of fat are often found deposited in the interstices of the fasciculi. In the latter case, as upon the disuse of a limb from disease of a principal joint, the muscles become thinner and paler, and lose their firmness. One remark, which deserves to be borne in mind in surgical operations, I have made upon the extent of retraction upon division in extenuated muscles: it is considerably greater in these than in the firm and well-developed muscles of a strong adult.

d. There is a degeneration of muscle, which is called steatosis: it is somewhat different from atrophy. Without losing its volume or its fibrous character entirely, the affected muscle becomes of a lighter colour, and greasy, and seems to be in process of conversion into firm lamellated fat. This change is sometimes attended with great pain of the muscle affected.

e. The voluntary muscles are susceptible of inflammation, abscess, sloughing.

In the arm of a subject in which death appeared to have been occasioned by phlegmonous erysipelas, I found the muscles of the fore-arm and upper-arm full of small abscesses.

In a case of ulcer of the leg, which spread rapidly, without any general taint of the system, the aponeurosis of the anterior muscles sloughed; when a singular tumor and protrusion took place of the unsupported and inflamed and granulating muscle, which, for a time, conveyed to some who witnessed it the impression that it was a malignant growth.

Acute rheumatism is said sometimes to be attended with the effusion of a jelly-like fluid in and upon the muscles attacked.

Gouty inflammation of muscular texture is occasionally followed by the deposit of lithate of soda between the fasciculi.

Muscle is liable to be involved in or to be the seat of all the malignant growths.

The liability of muscle to ossification has been already mentioned.

One species of entozoa [cysticercus cellulosæ] has been found in human muscles.

II. *Of tendons.*—Tendon is the seat of the following changes:—

a. When torn, its reunion takes place in this manner, which I have verified by experiment. The adjacent cellular membrane swells through an infiltration with lymph. The torn ends of the tendon, which have been drawn apart by the tone of the muscle, are at first imbedded in the thickened mass of infiltrated cellular tissue, without having any strong adhesion to it; in the progress of restoration, the infiltrated membrane becomes a firm callus, cohering with the sides and ends of the tendon, with which it at last becomes inseparably joined; at the same time it becomes denser, whiter, firmer; and shrinking in volume as it gains strength, it approaches more and more to the character of the tendon which it unites.

b. Tendons are susceptible of inflammation. In acute rheumatism, the tendinous structure is certainly involved;

and in gout, the gouty concretion is found deposited in tendon. In the tendo Achillis, and probably in other tendons, small painful swellings occasionally take place in persons who take much and irregular walking exercise: these swellings become less, and cease to be painful, when less exercise is taken.

III. The *bursæ mucosæ* are the joints of tendons. When tendons play over periosteum, or ligament, or cartilage, sacs of synovial membrane are interposed between the surfaces which move on each other. Similar sacs of synovial membrane are met with between the skin and tendinous, ligamentous, or periosteal surfaces, over which the skin has much motion; and what is very singular, similar sacs are liable to be produced in places where they naturally have no existence, upon unusual pressure being made there. Thus ganglions are often met with on the wrist, produced between the skin and the posterior annular ligament.

a. The affections of the synovial sheaths of tendons are no less troublesome than simple. As far as I have seen, they are limited to two varieties of subacute inflammation; one in which the inflamed membrane contains an increased quantity of synovia only; the other in which small portions of lymph, generally smooth and of an irregular shape, are contained in the increased synovia.

A young woman has recently left the Middlesex Hospital, who was under my care for the first of these affections. She had a painful swelling behind and below the outer ankle-joint, which evidently consisted of fluid in the sheath of the tendons of the perinei. With rest, as had happened on former occasions, the pain and tenderness of the ankle went away; and I succeeded, by applying irritants to the skin, in producing absorption of part of the fluid.

The second of these affections I have twice seen in the fore-arm. In one case the swelling was towards the wrist, and I entertained no doubt as to its nature. It was attended with no pain or increase of sensibility; and it mended, and seemed disposed to get well, upon repeated puncturing; when I lost sight of the patient. In the other case the fore-arm was generally and greatly enlarged, and I was not without my fears that it was affected with malignant disease; but on puncturing the swelling, synovia, with portions of lymph floating in it, escaped, and the intermuscular swelling diminished. I punctured the swelling twice, when the patient being better left the hospital, and I heard no more of him.

The subcutaneous bursæ present the following features under disease:—

α, Without thickening or pain, or with very trifling pain, there may be increased secretion of synovia. This affection is most frequent in the subcutaneous bursa of the patella. The appropriate treatment for it is rest, with the application of some irritant to the skin. If this method fails, in alternation with it, simple and repeated puncturing may be used. It *often* happens that the fluid thus once let out does not re-collect.

β, Great thickening and induration of the synovial membrane, with slight effusion of fluid. The best practice in this case is the excision of the subcutaneous bursa. I have cut out thickened bursæ both on the wrist, and at the outside of the head of the tibia; they were in each case, I believe, synovial sacs, that had been developed from pressure; for, in general, no bursæ are met with at the points where these occurred.

γ, With considerable thickening great effusion of fluid. A middle-aged woman was admitted into the Middlesex Hospital, with a large tumor in front of the knee-joint, with which I could satisfy myself that it had no connexion. Upon puncturing it, eight ounces of a dark-brown viscid liquid escaped. The cyst then inflamed and suppurated, producing a considerable degree of fever, which lessened upon making three or four openings half an inch in extent, at the different corners of the suppurating synovial membrane, and the patient recovered.

δ. Without thickening or effusion previously observed, sudden inflammation, with swelling of the parts around, and redness of the skin. This is not uncommon in men as well as women at the subcutaneous bursa of the patella: it appears to involve the knee-joint, but it does not. Upon opening the bursa, which in such an attack suppurates early, the inflammation subsides, and the synovial cavity, in the process of healing, becomes obliterated.

IV. *The filamentous tissue.* — The filamentous tissue, or cellular membrane, in one of its relations, forms the joints of the voluntary muscles; viewed in another, the slender and almost mucous threads of which it is composed with the cellular interstices between them, constitute a channel, through which the whole frame may be rapidly traversed by any fluid that has been introduced or produced at a single point.

a. It is in the last relation that the filamentous tissue will be first considered.

1. *Emphysema.*—The filamentous tissue may be distended with air, which causes

a uniform swelling, crepitating, or emitting a crackling sound, when pressed. The situations in which this swelling may begin, vary with the cause by which it is produced. It may take place spontaneously, when it is commonly general, and is supposed to be a product of secretion. It may arise from rupture or laceration of the mucous membrane of the larynx or windpipe, when the swelling appears chiefly over the face, neck, and upper part of the chest. It may succeed a broken rib, or any injury of the lungs, when it appears sometimes over the neck, face, and chest; sometimes over the chest and side only. It may arise from rupture of the bronchial membrane during violent efforts; and in this manner emphysema happens in puerperal women. Lastly, it may appear as an effect of gangrenous inflammation and mortification, when it is confined solely to the affected limb. In the latter case, air is produced by the decomposition of the serum of the blood in the morbid parts *. In examining the body of a person who died after injury of the lungs, with emphysema, on dissecting back the integuments and adipose tissue of the chest and abdomen, the cellular membrane appeared like bubbles upon the muscles, from which, when pressed, the air partly passed on into the adjacent cells, partly escaped.

2. *Serous infiltration, œdema, anasarca.*— Under the operation of various causes, of which the commonest is delay of the circulation from disease of the valves of the heart, the quantity of serous fluid in the filamentous tissue may be considerably increased; and this increase gives rise to a pale, white, or wan-coloured and cold swelling of the skin, which is distinguished by receiving the impression of the finger, or any other substance forcibly applied. When this swelling arises from a cause of such general influence as obstruction in the heart, the effect is necessarily general likewise; but from the free communication of the cells of the filamentous tissue, the fluid gravitates to the lower part of the person.

3. There are occasions on which the fluid with which the filamentous tissue is infiltrated is not simple serum, but has an acrid and stimulating quality. This is observed in the fluids of the cellular membrane adjoining a part bitten by a venomous serpent; or in the swelling which, in unwholesome constitutions, rapidly follows a severe injury, such as a compound fracture; or in phlegmonous erysipelas.

There is nothing more formidable in surgery than the second case to which I have adverted. An instance is now before me. A labourer, of a full gross habit, yesterday morning early was thrown down by a waggon, the wheel of which passed over his knee, causing a compound fracture of the inner condyle of the femur, and opening the knee-joint. He refused to have the limb amputated. At this time, thirty hours after the accident, the thigh, nearly to the hip, is swollen to nearly double its natural size, the veins full, and the skin mottled with large patches of red: the ordinary hue of the skin which attends this form of swelling, when its progress is something less rapid, is a pale coppery tint.

In the third case, a modified practice, founded upon that of Mr. Copland Hutchison and of Mr. Lawrence, is peculiarly useful. The most striking instance of its efficacy which I recollect is the following. A medical student, then an assistant at the Marylebone Infirmary, had poisoned a wound on his finger in examining a body. The worst form of symptoms supervened; he was attacked with shivering, with fever of a low character, and nervous irritability; there was no affection of the lymphatic system, but some tumefaction of the arm, and a large swelling upon one side of the body. Sir Benjamin Brodie had seen this patient, but being out of town, I happened at the moment to be sent for. The patient's breathing was oppressed; the cellular membrane on the side was swollen, without fluctuation; the skin was hard, brawny, and of a dark red colour. I made an incision through the skin and the thickened subjacent membrane; some serum and about six ounces of blood escaped; the tension of the side was thus lessened, and the patient mechanically relieved. From that period he mended, and finally recovered; but such had been the diffusion of acrid humour through the cellular tissue, that abscess formed not only in the shoulder and on the side which I had opened, but below the pectoral muscle, and the integuments of almost the whole back.

b. The cellular membrane, when divided, readily unites. I have already adverted to its efficiency in uniting other parts. In the restoration of a broken bone, a divided fibro-cartilage, a ruptured ligament, a divided tendon, muscle, or nerve, it is the surrounding cellular tissue, which, becoming infiltrated with lymph, forms the firm glue-like capsule, in which the divided parts are contained, and the process of organized reparation commenced.

c. The cellular membrane in phlegmonous erysipelas constitutes a medium along which an acrid humour rapidly finds its way, the presence of which contributes

* The observations in this paragraph, and in the next, are taken, nearly word for word, from Craigie's Elements of General and Pathological Anatomy—a very excellent treatise.

to excite suppuration and sloughing. The cellular membrane is no less the ordinary seat of common phlegmon. Phlegmonous or circumscribed inflammations often occur immediately below the integuments of the arm, and of the thigh. The same often form in the nates, and about the anus. A common boil is a small phlegmon, with a central slough of cellular membrane,—a carbuncle, a large and virulent boil.

d. Chronic abscesses have their seat in the cellular membrane, both below the skin and in the intermuscular and interfascicular spaces, the muscular fibre being absorbed to make room for the enlarging abscess. Such abscesses forming without pain, contain vast collections of fluid, which is commonly serum, containing flakes of lymph. Sometimes the serum is deeply tinged with blood. Abscesses of this kind are met with in the thigh; and with proper care, they commonly do well. It has been mentioned, that the chronic abscesses which form in the loins, and which usually point above the posterior part of the crest of the ilium, or below Poupart's ligament, are commonly connected with disease of the vertebral column. In that case, as far as my recollection serves me, the fluid of the abscess has more of a puriform character.

e, Another kind of abscess, which I suppose is the apostema frigidum of authors, occurs in the cellular membrane. The two following cases may serve to exemplify this disorder. In the first of the two, the inguinal lymphatic glands participated in the disease.

A middle-aged man had had for several months a tumor in the groin, which had formed very slowly; it was about the size of two half oranges, but presented three or four rounded elevations; he had experienced little pain in it. Shortly before his admission into the Middlesex Hospital, the skin had become red and softer at one part of the tumor. The swelling had greatly the appearance of malignant disease. The soft and red integument now threatened to slough; I punctured it, when a little air and fœtid ichor escaped. The integument, by sloughing and ulceration, in a few days gaped for some extent, and nodular granulating masses were seen within. No further unpleasant feature, however, presented itself; and without any great quantity of discharge taking place, the swelling slowly subsided, and the part healed.

There is a middle-aged man now in the Middlesex Hospital, who was admitted eight weeks ago, with the calf of the leg immensely swollen, the skin of a dark red, with a small hole in the middle, through which some thin pus found vent. Some months before, he had been kicked by a horse on the calf of the leg, to which he attributed the swelling. Placed in bed, and the leg poulticed, the swelling diminished at first rapidly; the discharge, however, was very inconsiderable in quantity. A probe being introduced, passed below the gastrocnemii; the external wound was enlarged a little; the abscess got well. But at the same time this patient shewed me a swelling on the back of the fore-arm, as large as, and much of the figure of, two half walnuts; it had been a year forming, and latterly had become painful; it adhered to the periosteum covering the posterior edge of the ulna and to the aponeurosis. My attention was now drawn to the general health of the patient, and I found that he had had for many months a scaly eruption upon the skin; and he said that a year before, a tumor like the present, only less, had formed at the corresponding part of the other arm. I gave him, upon this, the decoction of sarsaparilla, with the oxymuriate of mercury: his health began to improve, and the scaly eruption to die away; but the lump below the elbow increased in size. I therefore punctured it with a lancet in three places, where it was most elastic; it bled freely, and at one part small fragments of lymph escaped with the blood. The swelling was poulticed, and is now beginning to suppurate, and lessens daily.

f, The various morbid deposits and the different forms of encysted tumors, are met with in the cellular tissue.

V. *Of aponeuroses and fasciæ.*—The principal part which these textures play in disease is mechanical; they are tense, strong, and unyielding; they bind the flesh of the limbs; but what is salutary support in the healthy condition of a limb, is liable to become painful and mischievous tension and confinement in disease. This the surgeon can easily relieve. I shall describe two especial affections of the aponeuroses.

The first is simple inflammation; it is the most frequent untoward consequence of ordinary bleeding. The wound festers; the arm and fore-arm adjacent to the elbow are swollen, painful, and the skin has a slight blush upon it. Rest, cooling medicines, fomenting, and a raised position of the limb, in a few days relieve the inflammation.

The second case is rarer; it is a part of lues. I have seen, in connexion with syphilitic periosteal inflammation and suppuration on the tibia, inflammations with suppuration on the aponeuroses of the arm and leg, bearing a close affinity to the periosteal nodes.

VI. *Of the adipose tissue.*—The most re-

markable circumstance with which I am acquainted respecting this texture, is its increase in animals after the removal of the spleen. This increase begins in dogs (upon two I made the experiment), as soon as they have recovered from the abdominal wound. The duration of the obesity is temporary: before a year is passed, the animal returns to its former weight and degree of spareness.

The adipose tissue readily unites when divided; and if the wound heal by granulation, presents, in the process of restoration, granulations as florid as those of the adjacent muscle.

The adipose tissue is liable to general or partial hypertrophy.

Common fatty tumors result from partial hypertrophy of this texture. They require to be removed by an operation; which occupies very little time, and is easily performed, if the surgeon begin by opening the sac of cellular membrane that immediately contains the tumor. Fatty tumors consist of large lobulated masses of coarse adipose membrane and fat. They often acquire a large size. The largest which I have removed weighed 13 pounds 2 ounces.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Meetings, and Papers read.

The ordinary meetings of the Society for 1834-5, commenced the 11th of last month, at the house of the President. The whole of the time of the meeting on the 11th of November was consumed in the consideration of matters arising out of the grant of a charter by the Crown, a copy of which we gave in a recent number.

Dr. Philip on the Sympathies.—The next meeting took place on the 25th, when, after some private business, a paper was read from the pen of Dr. Wilson Philip, "On the Influence of the Sympathies of the more perfect Animals in determining the Nature and Progress of Disease." The abstract nature of the subject, and the unavoidable absence of new facts, rendered the paper somewhat barren of general interest, notwithstanding the hard-earned and well-deserved reputation of its author: these considerations, joined to the pressure of "metal more attractive," compels us to abstain from analysing it.

Mr. Key on Ulceration in the Joints.—Another meeting was held, *horâ locoq. solitis*, on the 9th of the current month, when a paper was read from Mr. Key, on ulceration in joints. The principal feature in the paper appeared to us an ingenious attempt to prove that ulcerative erosion, or thinning of cartilage, is in many cases not the effect of absorption, so much as of ramollissement or breaking down of the tissue, which would appear to be a return *pro tanto* to the theory of suppuration maintained before the discoveries of Hunter. We have not space for a detailed analysis of it: the author illustrated his views by interesting preparations.

Mr. Cock on the Anatomy of Congenital Deafness.—On the same evening was read a short but important paper, by Mr. Cock, on the anatomy of congenital deafness. In this paper the author gave details and observations made in the examination of several cases of congenital deafness, all agreeing in having the semicircular canals more or less imperfect. The inference of the author was, that the deafness was owing to the defective structure or development of the canals.

Dr. Seymour on the Use of Morphia in Lunacy.—On the 23d ult. the fourth ordinary meeting of the session was held in Conduit-Street, when a paper by Dr. Seymour, of St. George's Hospital, was read, on the use of morphia in lunacy. In this paper the author gives details of three cases, in which the acetate of morphia, generally in grain doses, and aided by constant refrigeration of the head and by mild aperients, appeared to produce very satisfactory results. He mentions having prescribed it nightly for several consecutive months with excellent effects. The practice, which is rather at variance, we believe, with ideas very generally received as to the properties of opium as a remedy for insanity, was suggested, the author stated, by the experience of the great asylum of Bethnal Green, with the results of which he had been made acquainted some years since. The class of cases for which Dr. S. considers the remedy especially advisable, are the melancholic.

Yet another meeting is, we understand, likely to be held at the house of the president. It is not expected, if we are not misinformed, that the apartments taken by the Society in Berners-street will be fully ready before the middle of January.

PASTILLES (*de Lèpère*) FOR COLDS AND CATARRHS.

No. 1.—Acetate of morphia, 1 *gros*; gum tragacanth, 3 *onces*; sugar, 18 *livres*; water, q. s. To be made into pastilles, a *demigros* each.

No. 2.—Sulphate of quinine, 1 *once*; saffron powdered, 3 *gros*, 54 *grains*; liquorice powdered, 2 *livres*, 4 *onces*; gum tragacanth, 3 *onces*; sugar, 18 *livres*; water, q. s. Make as before, pastilles, a *demigros* each.

No. 3.—Acetate of morphia, 1 *gros;* camphor. 1 *once*, 1 *gros;* chloruret of lime, 2 *onces*, 2 *gros*; gum tragacanth, 3 *onces;* sugar, 18 *livres;* water, q. s. Pastilles of this description to weigh 8 grains each.—*Gaz. des Hôpitaux.*

EFFFCTS OF IODINE ON THE EPIDERMIS AND HAIR.

By M. Stedman.

The author relates, that in the winter of 1831, having amputated the foot of a person affected with scrofulous disease of the instep, he was for a long time unable to obtain a cure of some scrofulous ulcers situated on the tibia. Wishing to act on the constitution, and to combat the diarrhœa, which seemed to keep up the disease, he prescribed iodine. Before the appearance of the ulcer had been modified, and about a fortnight after the patient had commenced the use of the iodine, he remarked that the scalp, which for a long time had been covered with scales and filth, was completely freed from them, and that the hair which had been formerly dry and filthy, had become soft, and had acquired a bright gloss.

The observation of these change directed the attention of Mr. Stedman to other scrofulous patients, under the same medical treatment. Similar changes occurred. One thing is remarkable, that while the hair and scalp experienced this improvement, the tumors or scrofulous ulcers, against which the medicine was specially directed, remained in the same state. All the patients were kept to a milk diet, and the iodine was administered according to the following formula of M. Lugol:—

℞. Iodini, gr. v.
Pot Hydriodat. gr. x.
Aq. Distill. ℥iv.

Capt. gutt. vi. bis in die; dose aucta gradatim ad gutt. xl.—*Boston Medical Mag.*

INSECT PARASITES.

M. Vallot, of Dijon, writes to the Academie des Sciences, that, in September last, he observed, on the female flax, some larvæ of the *noctua persicariæ* which were visibly preyed upon by intestinal worms. The worms pierce the skin of the *nortua* readily, are white, glistening, and ovoidal in shape. They appear to have a tail, but it is owing to the gluey nature of their dejections. A larva of this species, on quitting the nortua at whose expense it has been nourished, changes at once its integument: the chrysalis is well formed, and in the course of twenty-four hours becomes of a shining black colour. It adheres by the back to the place of its support, and presents its abdomen to the observer. At the end of a fortnight the perfect insect is developed: it is the *Eulophus*, with branched antennæ.

BONE SOUP.—(*Soupe à la Gelatine.*)

This economical and nutritious substance has now been tried for five years, at the Hospital St. Louis, Paris, with the most complete success. It appears that more than a million and a half of portions of the soup have been distributed, within that period, to above 45,000 persons. The portion is a *demi-litre;* and it is calculated, that, all expenses included, the cost of each *litre* (about $1\frac{3}{4}$ pint English) is not more than 18 *cent.* 3 *mill.* (about $1\frac{3}{4}d.$ of our money.)

ORNITHORYNCHUS PARADOXUS.

A communication from Mr. Richard Owen, of the College of Surgeons, London, was read in the Académie des Sciences on the 3d ult. It was on the subject of the *mammiferous* organization of the ornithorynchus.—*Journal Hebdomadaire.*

REPUTED ANTIDOTE FOR ARSENIC.

M. Orfila, at a late sitting of the Académie de Médecine, gave an account of M. Lesueur's experiments on the properties of the hydrated tritoxide of iron, as an antidote for arsenious acid. When an animal has the power of vomiting (said M. Orfila) this poison may be expelled wholly, or in part, from the stomach, and recovery take place: so that if a reputed counterpoison be administered in these circumstances, to it may be attributed the effects which really belong to the vomiting. Now M. Lesueur, in order to avoid this objection, took care to tie the œsophagus immediately after the introduction of the deleterious substance.

In his first experiment, he gave a strong dog nine grains of arsenious acid, and, immediately after, three ounces two gros of the hydrated tritoxide of iron. The œsophagus was tied. No accident resulted: the dog still lives—seventy hours after the experiment. The same was tried on other dogs, with the same result.

In a second experiment, the tritoxide was not given till half an hour after the ar-

senie: the dog died with all the symptoms of poisoning. Now, as it is known (said M. Orfila) that arsenious acid does not kill by local inflammation, but by absorption, we must infer that, in this second experiment, the absorption had actually taken place—for which there was abundant time.

The conclusions stated by M. Orfila are, that the hydrated tritoxide of iron is an effective counter-poison for arsenic; but that the anhydrous tritoxide has not the same virtues. He imagines that an arsenite of iron is formed in the stomach, and that this substance is not poisonous.

It was suggested by M. Duval, that Navier had long ago recommended the salts of iron by way of antidote for arsenic, and that writing-ink had even been employed for the purpose.

M. Chevallier, it is said, is engaged at present in ascertaining the efficacy of large doses of the *protoxide* of iron. — *Journal Hebdomadaire.*

[We have little faith in the properties of the new *antidote*, so confidently lauded by M. Orfila. It is pretty evident, from the large quantities of it required, that it must act chiefly by mechanically protecting the coats of the stomach: but we refer our readers to Mr. Brett's ingenious experiments on the subject, in a late number of this journal. See p. 220, *ante.*]

OFFICIAL CONTRADICTION OF THE MISSTATEMENTS IN THE LANCET,

REGARDING THE SCHOOL OF PHYSIC IN IRELAND.

To the Editor of the Medical Gazette.

Sir,

Having seen in the Lancet of Saturday last a statement that the classes of the School of Physic in Ireland have declined to one-third of the usual number since the late Parliamentary inquiry, I am directed by the governors of this hospital to communicate, through the medium of your journal, that the clinical class of the School of Physic *is more numerous, and better attended this season, than for several previous years.*

I have the honour to be, sir,
Your obedient humble servant,
S. C. Hope Cooper, *Reg.*

Sir Patrick Dun's Hospital, Dublin,
Dec. 23, 1834.

NEW WORKS.

An Essay on the Use of the Liquor Potassæ and Liquor Alkalinus, in the Treatment of Malignant Cholera: with Notes and Cases. By H. W. Dodd, M.R.C.S.

In the Press.—Remarks on the Electric and Galvanic Influence, in the Cure of Acute and Chronic Diseases. By M. La Beaume, Esq. Medical Galvanist, &c. to the King, F.L.S. &c.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO RECEIVED CERTIFICATES DEC. 24, 1834.

George Henry Bore, Ryde, Isle of Wight.
William Phillips, Brockton Grange, Salop.
Robert Ellison Gorst, Cheshire.
James Shaw, Manchester.
John Thomas Harland, Ashbourne, Derbyshire.
William Harris Green, Woburn, Bedfordshire.

WEEKLY ACCOUNT OF BURIALS,

From Bills of Mortality, *Dec.* 23, 1834.

Abscess	1	Inflammation	30
Age and Debility	43	Bowels & Stomach	3
Apoplexy	9	Brain	4
Asthma	27	Lungs and Pleura	4
Childbirth	2	Influenza	1
Consumption	45	Insanity	1
Convulsions	37	Jaundice	2
Croup	5	Liver, diseased	1
Dentition or Teething	7	Measles	19
Dropsy	12	Mortification	3
Dropsy on the Brain	14	Paralysis	1
Dropsy on the Chest	5	Small-Pox	9
Fever	5	Sore Throat and Quinsey	2
Fever, Intermittent, or Ague	1	Stone and Gravel	1
Fever, Scarlet	10	Stricture	1
Fever, Typhus	2	Thrush	1
Heart, diseased	1		
Hooping-Cough	15	Stillborn	12

Increase of Burials, as compared with the preceding week . . . 48

NOTICES.

"An Unsuccessful Competitor" states no new *facts*, and we have no desire to open our pages to mere matter of *opinion* on the subject.

Mr. Roberton's paper has been received: the suggestions accompanying it shall be attended to.

We are informed by Dr. Turner, that the report relating to his evidence in the case of alleged poisoning, which we noticed in our last number, was incorrectly given in the newspapers. We are obliged to postpone Dr. T.'s letter, which, although dated the 22d, did not reach us till the evening of the 24th; before which time, owing to Christmas falling on the Thursday, we had been obliged to make up the number.

We cannot insert the anonymous letter about the Marylebone Infirmary election.

W. Wilson, Printer, 57, Skinner-Street, London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, JANUARY 3, 1835.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture XIV.

DISEASES OF THE PARENCHYMATOUS STRUCTURE OF THE LUNGS.

ASTHMA.

We now proceed, gentlemen, to the consideration of one of the most complicated affections of the pulmonary system—I mean Asthma.

Asthma is a disorder which until lately has been but little understood; firstly, because the organic changes of the different tissues composing the cardiac, and especially the pulmonary structures, have been but little known; secondly, because the signs derived from auscultation have been but recently discovered, and are not yet sufficiently appreciated; and lastly, because we have long been in the habit of considering signs as diseases themselves, and not as their representatives—a gross error, indeed, since the same sign may be common to a variety of lesions, each of a very different nature, and each requiring a very different mode of treatment. To give you proofs of this, the older nosologists created a class of diseases under the name of *dolores*, or *pains*. Now pain is not in itself a disease; it is a symptom which becomes a sign of a certain condition of parts, which condition is the disease.—*Tussis*, or *cough*, has been established as a genus, but it is a sign only of a variety of lesions of the pulmonary structure, which lesions constitute the diseases, and not the signs. Cullen formed a genus under the appellation of *dyspnœa*, or difficulty of breathing; but this again is but the denomination of a sign—a sign, too, representing every change of the organs contained in the chest, when arrived at a certain intensity. The same objection may be applied to the term *asthma*, or difficulty of breathing, occurring at intervals, without fever, for this state is only a sign of certain anormal conditions of the pulmonary or cardiac organs, which conditions ought to be considered as the diseases, which we shall soon see are very various, and require different modes of treatment, although their effect may be the same in producing the common sign.

Definition of asthma.—Asthma is defined to be a difficulty of breathing, occurring at intervals, without fever. I object not to the term, or the definition, so long as we recollect their true value, namely, that asthma is a mere symptom, or sign, of various changes producing the common effect of intermittent dyspnœa.

According, however, to the vulgar acceptation, the word asthma is applied to every continued difficulty of breathing assuming a chronic form. To understand this subject, it will therefore be necessary to examine, firstly, the various causes which induce continued and chronic difficulty of breathing; and secondly, those which produce an intermittent difficulty. In the hopes of elucidating this very complicated subject, I offer the following tabular view, and beg you will constantly refer to it as I proceed.

Chronic Difficulty of Breathing.

Species 1st, *Continued*—Dyspnœa of Cullen.

Causes, are Catarrhs { Mucous. / Pituitous, with Œdema Pulmonum. / Dry, with Emphysema and Œdema Pulmonum.

Species 2d, *Intermittent*, or occurring at intervals, without fever—Asthma of Cullen, &c.

Causes { 1. Organic—Catarrhs { Mucous. / Pituitous, with Œdema Pulmonum. / Dry, with Emphysema and Œdema Pulmonum.
2. Nervous..... { Asthma, with Puerile Respiration. / Asthma, spasmodic.
3. Complication of Organic and Nervous Causes.

You perceive, gentlemen, that I head this table with the phrase "chronic difficulty of breathing," an expression which requires no definition. I divide this into two classes; 1st, that which is *continued*, having no intermission, and existing with greater or less intensity, and which answers in general to the *dyspnœa* of Cullen; 2d, that which is *intermittent*, or occurring at intervals, which corresponds to the *asthma* of the same author. I then proceed to examine the causes, or real diseases, which effect these aberrations in the functions of respiration.

Causes of continued difficulty of breathing.—These causes may very easily be understood; indeed, I have already described them, and shall therefore be very brief in their detail, since you can refer to what I have already said relating to them; they consist of the various forms of chronic catarrh, of emphysema, and œdema pulmonum.

Chronic mucous catarrh consists in chronic inflammation, or gleet, of the mucous membrane lining the aerian passages, and having for its result a yellow secretion. This disease is usually trifling at first, but by the reiteration of its external causes may extend from point to point of the mucous lining, until the whole becomes at last affected. In proportion to the extent of the disease the patient is troubled with dyspnœa; at first it may be slight, requiring, perhaps, unusual movement to excite it, but gradually the difficulty becomes more and more permanent, till it terminates, as old age advances, in suffocative catarrh.

Chronic pituitous catarrh.—The same observations precisely apply to this disease as the preceding, the principal difference consisting only in the nature of the secretion, which in this case is clear and colourless. The two forms of catarrh are not infrequently combined. *Œdema* of the lungs often co-exists with chronic mucous and pituitous catarrhs, especially the latter; and in proportion to the quantity of serum infiltrating the organ, so must the difficulty of breathing be increased, since that fluid occupies the space which should be filled by air.

Chronic dry catarrh.—You will recollect that this affection is so named, not because there is no secretion, but because there is infinitely less than in the two preceding forms of catarrh. The mucous membrane is here habitually reddened and swollen, and the disease has a very strong tendency to become chronic, and extend gradually through the whole of the bronchial tubes. Constant dyspnœa is always the result, its degree being proportionate to the number of tubes affected. *Vesicular emphysema* is a frequent consequence of this form of catarrh, and when present, adds to the difficulty of respiration, by preventing the free entrance and exit of the atmospheric air to and from the lungs. *Œdema* is also occasionally superadded.

Chronic hepatization and gangrene of the lungs, the presence of tubercles, or other adventitious deposits, chronic effusions into the pleuritic cavities, might be enumerated as causes of continued chronic dyspnœa; but these diseases are of slight duration compared to catarrhs, since the latter may last for many years, and the former run their course much more rapidly.

Such are the causes of continued chronic difficulty of breathing; we will now investigate those which produce the intermittent form.

Asthma, or Intermittent Dyspnœa.

The causes of asthma, or intermittent dyspnœa, may be referred to three heads: the first I have called *organic*, the second *nervous*, the third consists of a *complication* of both.

1*st*, *Organic causes.*—These causes are precisely the same as of continued chronic dyspnœa, which are, chronic mucous, pituitous, and dry catarrhs, with their combinations of emphysema and œdema pulmonum.

Chronic mucous catarrh.—It not unfre-

quently happens, that when this disease has lasted for a considerable time, especially in aged persons, that a fresh catarrh is grafted upon the bronchial mucous membrane, and a great increase of mucus suddenly takes place, so great and so sudden, that some of the larger bronchial tubes become filled by it, so as totally to prevent the passage of air down them; the result is, that the habitual dyspnœa becomes suddenly increased, the patient breathes with great difficulty, and he is only relieved by a large expectoration of mucus, after which he returns to his usual state. This fit is often repeated. In consequence of the copious expectoration which terminates the paroxysm, this form has been called *humid asthma.*

Chronic pituitous catarrh.—The same observations exactly apply to this catarrh, the difference being only in the colour of the secretion, and in its being accompanied more frequently by œdema of the lung, rendering the paroxysm more severe. It is also a case of *humid asthma.*

Chronic dry catarrh is also an organic cause of asthma; it occurs from the sudden engrafting of a fresh catarrh. I have so fully already explained the symptoms of this disease, that I need only refer you to it. In consequence of the slight quantity of expectoration terminating the paroxysm, it may be considered as an instance of *dry asthma.*

Paroxysm of humid asthma.—Although I have previously described the symptoms of catarrh, yet it may be necessary to throw into one point of view those by which increased temporary difficulty of breathing is accompanied.

Humid asthma more commonly attacks men than women, more frequently old persons than young. It is generally preceded by nausea and unpleasant eructations, by sensations of flatulent distention of the stomach and bowels, by loss of appetite and the general symptoms of dyspepsia, and often by drowsiness — this state continuing two, three, or four days before the attack. At last, towards the evening, the patient complains of tightness, or a sense of stricture or straightness about the chest, particularly in the direction of the sternum; the dyspnœa gradually increases, and becomes very great; there is often considerable wheezing and desire for fresh air. The cough is usually slight at first, and the expectoration is but trifling. The paroxysm thus formed may now continue for some hours, generally until the approach of morning. Finally, the cough increases, and the patient becomes relieved by a copious expectoration of mucous or pituitous matter, by which the bronchial tubes become emptied: the paroxysm then ceases, and the sufferer returns to his usual state of habitual but slighter dyspnœa.

If the chest be examined during the fit, it will be found that a good sound may be elicited by percussion. The respiratory murmur is often lost in many points of the lungs, in consequence of the obturation of the bronchial tubes; in others it becomes puerile here and there. All the different species of wheezings may be heard in the same patient. Thus in the beginning of the paroxysm you will find the sibilating or sonorous sounds, but towards its termination they become intermixed with the mucous rattle. When œdema of the lungs occurs, it is indicated by the rhonchus crepitans.

A paroxysm of humid asthma is frequently renewed in three, four, or five days, especially in damp or cold weather; occasionally it does not return for many months. In aged persons it sometimes happens that the power of expectorating is lost, or so extremely diminished that the secretion accumulates. The fit in that case will continue for many days; the dyspnœa increases; the face becomes bloated and livid; coma, from which the patient is with difficulty roused, supervenes; the mucus still continues to increase; the catarrh becomes suffocative; and the scene closes in death.

2*d*, *Nervous causes.*—It sometimes occurs, that individuals are attacked with severe and sudden dyspnœa, without any apparent organic cause whatever; we then attribute them to some peculiar condition of the nervous system. Pure nervous asthmas are somewhat rare, for, as we shall hereafter see, they are most commonly combined with organic lesions; but I have seen them in their purest forms, in which it was impossible to discover any of the species of catarrh, emphysema, or œdema.

Laennec has divided asthma from nervous causes into two varieties. 1st, Asthma from increased necessity for respiration, or with puerile respiration. 2d, Spasmodic asthma.

1*st*, *Asthma from increased necessity for respiration, or with puerile respiration.*—The expression "increased necessity for respiration," requires explanation, or it will be impossible to understand what is meant by this form of asthma.

The elucidation of the following proposition will demonstrate what is meant by the term.

The loudness of the respiratory murmur is always proportionate to the necessity for respiration, so that it becomes a measure of that necessity.

Thus, if you examine the respiratory murmur of an infant (if the breathing be going on calmly and without interruption), you will find it very distinct and loud;

every air-cell seems to expand with vigour and force. The necessity for respiration in a child is great, because all its organic functions are in high activity; it requires to be fed frequently; its digestion is extremely active; the chyle is carried with a more rapid current into the blood; the heart is more active and frequent in its movements; the blood requires a greater proportionate quantity of air, and the function of respiration is carried on with increased force; or, in other words, the necessity for respiration is great, and the loudness of the sound of the respiratory murmur is at once the proof and the measure of it.

Examine the chest of a youth: the sound of the respiratory murmur, although perfectly audible, is less so than in the infant; because, at the adolescent period, the extreme energy of the functions of nutrition and sanguification are diminished, and the blood requires proportionately less air. The necessity for respiration is now diminished, as well as the loudness of the sound of the murmur.

Apply the stethoscope to the chest of an old person, and in many the respiratory murmur is scarcely to be heard at all; it is always less loud, because all the vital functions become less energetic; the digestion is slower, the circulation less frequent, and less air is needed: the necessity for the respiratory act is consequently diminished, and the sound of the murmur is almost lost.

I may add here, that we see in the organization of the bones and cartilages of the chest, at different ages, a beautiful adaptation to the necessity for respiration. In infancy, the chest admits of free dilatation in all its diameters, in consequence of its flexibility; as age advances, its mobility becomes less; the octogenarian scarcely moves his ribs at all, but breathes by the diaphragm alone.

The necessity for respiration not only varies at different periods of life, but it varies also in different individuals. Thus you will find that the respiration of persons of certain temperaments, as of hypochondriacs or hysterical women, produces a much louder sound than that of individuals of an opposite or phlegmatic disposition. The function of respiration is commonly more active in women than in men.

It is a curious fact, that the necessity for respiration is commonly less during sleep than in the waking state. It is for this reason you will find that patients who are labouring under considerable dyspnœa during the day, when awake, will at night, whilst sleeping, respire with comparative ease and freedom.

But not only may the necessity vary according to age, sex, temperament, and the states of sleeping and waking, but it may vary in the different parts of the same lung. If the lung of one side be hepatized, or compressed by fluid in the pleuritic cavity, the function of the opposite lung will become doubly energetic to make up for the deficiency, and the murmur of the healthy organ will become as loud as that of a child; from whence it is called *puerile respiration*. Nay, if a portion of the lung of one side alone be affected, the healthy part of it will act with increased force, and give the puerile sound.

If I have been sufficiently clear in explaining the doctrine of *increased necessity for respiration*, you will have no difficulty in understanding what is meant by asthma from this cause. Thus you may be called to a patient labouring under great and sudden dyspnœa, who is endeavouring to expand his chest in every direction, grasping surrounding objects for the purpose of obtaining fixed points from whence he may effect that expansion; whose face is turgid, livid, or slate-coloured, from venous congestion;—you examine the local signs, expecting to find an absence of the respiratory murmur, or at least the presence of catarrhal signs, but you find, to your great surprise, the lungs acting with great force, and the respiratory murmur extremely loud at every point. The paroxysm may last for many hours, but it is not terminated by expectoration, nor does the patient relapse into continued dyspnœa afterwards, as in asthma from organic causes. This is another form of *dry asthma*.

This disease in the pure state is rare. In ten years, I have seen but three cases; all of them were in females, and none were fatal. The paroxysms were frequently repeated.

2. *Spasmodic Asthma.*—In the infancy of morbid anatomy, every sudden dyspnœa unconnected with inflammation was attributed to spasm; since that science has made such great progress, the existence of spasm has been denied, and all sudden difficulties of respiration have been supposed to depend upon organic lesions.

I will not deny—nay, I am fully disposed to believe—that organic changes must be the immediate causes of all symptoms; for it is difficult to conceive how a function can be altered, without supposing some material change to be effected in the organ performing that function, or in the vessels and nerves supplying it. It is very true that the scalpel of the anatomist, or the test of the chemist, cannot always shew the nature of the lesion or change; but may not this arise from the imperfection of our means, or may not these alterations be so fugacious or microscopic as to elude our research? I would freely admit,

therefore, in the cases of spasmodic asthma, the probability of the nervous system being temporarily affected organically, although there be no other proofs than the aberration of its functions; I assert only, that spasmodic asthma may occur without the evidence of any lesion of the lungs.

But spasms of the bronchial tubes and air-vessels has been affirmed by some, and denied by others, to exist. Let us examine the question.

Spasm is defined to be an involuntary contraction of a contractile organ. It has been divided into two species:—1. *Tonic*, or continued contraction, as in tetanus; 2. *Clonic*, a sudden contraction, followed by as sudden a relaxation—as in chorea, convulsio, hysteria, &c.

If, as is supposed, spasm can only affect muscular fibre, it will be necessary to search whether such fibre can be found in the bronchial tubes. Reissessen has demonstrated their existence in bronchial vessels of a very small caliber, and Laennec says he has traced them to tubes of one line in diameter. The former author infers their presence in the air-vessels themselves, but such is their minuteness that we can have no ocular proofs of this, although the facts I am about to detail would lead us to coincide in that opinion.

Admitting, then, gentlemen, the existence of muscular fibres in the bronchial tubes, we must admit also that they are subject to the same pathological laws as the muscular fibres of the rest of the body—that is, they may be affected by spasm and relaxation.

We shall first examine whether there are any stethoscopic proofs of spasm of the bronchial tubes, and then describe spasmodic asthma; and finally proceed to offer you evidences of muscular relaxation, by which asthma from increased necessity of respiration will be still further elucidated.

Stethoscopic proofs of spasm of the bronchial tubes.—In describing whooping-cough, I mentioned that after the violent and repeated respirations were made, a deep and convulsive inspiration followed (producing the whooping sound). It might be supposed that the air entered the lungs during this apparent inspiration, but it does not; for, during this period, the respiratory murmur is inaudible; the dilatation of the cells, therefore, does not take place. Why is this? It can only arise from occlusion of the tubes or air-cells; and what can close them but a spasmodic constriction? It cannot be from any organic cause, for that would be permanent; but the respiratory murmur immediately returns upon the cessation of the paroxysm.

Sobbing consists in a rapid succession of short inspirations and expirations; *gaping*, in a very deep inspiration, followed by a shorter expiration. In both these cases you will often hear no respiratory murmur. What prevents the air entering into the cells in these cases? There certainly must be some obstruction, which is explicable by a temporary spasmodic state alone.

If you examine persons in a state of anhelation from running, you will usually find that their respiratory murmur becomes gradually evident as the dyspnœa diminishes, but it is not heard at all during its intensity. Here, then, is another instance in which the temporary occlusion of the cells is only attributable to spasmodic constriction.

No respiratory murmur can be heard, or at least but very little, during an attack of spasmodic asthma: desire a patient, during a paroxysm, to read as loud and as long as he can in one breath; you will then find the puerile respiration form in one or more points of the lungs. Why was the murmur not heard at first?—because the obstructing spasm prevented the admission of the air. Why was the puerile respiration heard during the reading?—because you threw the patient into still greater dyspnœa, and thereby occasioned so great a necessity for respiration as to overcome the spasm: it was a greater force overpowering a less.

If, then, these facts be true (and I have often enough proved them to satisfy myself that they are so), we shall not be accused of an insufficient enumeration of causes in attributing them to spasm alone, for they occur during the absence of organic lesions, and the disappearance of the respiratory murmur is so sudden that I think it impossible they can arise from any other source.

Supposing, then, gentlemen, that spasm of the muscular fibres of the bronchial tubes may occur, you may readily conceive it to be of the tonic form, or persistant for some hours, and that the patient, during that time, would be thrown into great distress from difficulty of breathing. This state constitutes what is called *spasmodic asthma.*

Symptoms of spasmodic asthma.—The functional and general symptoms of this affection are precisely the same as those of asthma from increased necessity for respiration; the dyspnœa is equally sudden, equally great; the face becomes swollen and livid, and the brain the seat of sanguineous congestions; there is the same desire for fresh air. The fit will sometimes last for hours; sometimes the patient, as I have seen, expires in a moment, in a state of asphyxia. The pathognomonic sign arises from the absence of the respiratory murmur almost all over the chest. The fits do not terminate by any expecto-

ration, nor does the dyspnœa return between them. This is another form of *dry asthma.*

Having thus, gentlemen, proved to you (I hope satisfactorily) that spasm may affect the aerian passages, I now proceed to examine the subject of *relaxation* of the muscular fibres of these tubes. To prove a relaxation of muscular fibre after its contraction were unnecessary, it is self-evident; but a question has arisen, particularly relative to the hollow muscles, whether it is always a passive movement, or whether the opposite state to contraction is not effected by an active force—a strong expansion, rather than a mere relaxation.

Upon opening the chest of a large living animal, and embracing its heart with your hands, you will instantly, I think, satisfy yourselves that the dilatation of the ventricles is effected by a most active expansion of their parietes; for you will find it extremely difficult, by pressure, to prevent their dilatation. It may be said that this expansive force arises from the impulse given by the blood entering these cavities; but separate the heart entirely from the body, so that no blood can pass into it, still the expansion will continue for a time, so as to afford resistance to pressure. It appears to me an abuse of terms to say that that is a passive relaxation which a compressing force cannot prevent.

If one hollow muscle can dilate with an active force, it is fair to infer that another may do so. Do the muscular fibres of the bronchial tubes and of the air-cells (if the latter exist) dilate by an active or passive movement? Are the movements of the lungs mere consequences of the movements of the chest; or do they contract and dilate by a power inherent in themselves?

There can be no doubt that the movements of the chest and diaphragm strongly influence the capacity of the lungs; but I think there are quite sufficient proofs that the pulmonary organs are not passive in these changes, and are not to be considered as inert.

To obtain a direct proof of the active resiliency of the lungs, I have four or five times examined their movements by opening the chests of living animals. I have twice thought only that I had seen the independent movements of these organs; but I confess myself not satisfied with these experiments. But the moment we expose the pleuritic surfaces of the lungs to the atmospheric air, we submit them to a pressure which may prevent their expansion: the animal, too, is in a struggling and expiring state. We should not forget the advice given by Laennec, that before we draw our conclusions from experiments on living animals, we should always defalcate the anomalies arising from the agonies of death.

But we have sufficient proofs from auscultation of the active expansion of the lungs without resorting to experiments, which, however necessary for the advancement of physiological science, are always performed with reluctance. Thus the most active voluntary movements of the chest can never so dilate the air cells as to induce puerile respiration; shewing clearly that that condition does not depend upon external movements, but upon the active expansion of the lungs themselves. Again, if any portion of a lung be impermeable to air, puerile respiration will arise in some other portion, even when the movements of the chest are not perceptibly increased.

I may state here that asthma from increased necessity for respiration consists in too active an expansion of the air-cells—a state exactly opposed to asthma from spasm, but both evidently arising from some peculiar condition of the nervous system, of the nature of which we are at present totally ignorant.

Asthma, from combinations of Organic and Nervous Causes.

It is somewhat rare to meet with purely nervous asthmas, but those from combined causes are very frequent. It is impossible for me to enter into the details of these combinations, as it would lead me far beyond the limits which a course of lectures like this permits; but if you have well understood what I have said, you will have no difficulty, by a little reflection, in anticipating these complications, since you are now acquainted with all the elements from which they are formed. Thus—

Asthma with puerile respiration may be combined with all the forms of catarrh, with emphysema and œdema of the lungs.

Spasmodic asthma may have precisely the same complications: so that if you would extend the tabular view I have already given, it might be formed in the following manner:—

Asthmas from organic and nervous causes	Asthma from increased necessity for respiration, combined with ..	Chronic mucous catarrh	Œdema Pulmonum.
		Chronic pituitous catarrh	
		Dry catarrh.—Emphysema pulmonum.	
	Spasmodic asthma, combined with	Chronic mucous catarrh	Œdema Pulmonum.
		Chronic pituitous catarrh	
		Dry catarrh.—Emphysema pulmonum.	

The pathognomonic signs of these varieties will of course depend upon the nature of the complication. In asthma from increased necessity for respiration, the puerile respiratory murmur will be the essential sign; if it be combined with chronic mucous, or pituitous catarrh, the local signs of these affections will be present also—as the sibilating sound, the deep sonorous wheeze, or the mucous rattle. The yellow or white expectoration will determine which species of catarrh it is. If œdema co-exist, then its sign of rhonchus crepitans will be distinctly heard; and these would be forms of humid asthma. When dry catarrh is the complication, then sibilating or sonorous wheezing will be present; and the expectoration at the termination of the fit consists of a few pearly sputa, mixed with a small quantity of diffluent pituitous matter. This constitutes a form of *dry asthma.*

Spasmodic asthmas are still more commonly complicated with organic changes than the preceding. In these cases, superadded to the almost general absence of the respiratory murmur, the various species of rhonchus may be heard at different parts of the chest; and the appearance of the expectoration will shew the character of the complicating catarrh.

Percussion elicits a good sound in all the forms of asthma, simple or combined, since in asthma, from increased necessity for respiration, there is an excessive quantity of air in the lung; and in spasmodic asthma some air is always confined below the obstructing cause. An emphysematous complication renders the sound upon percussion much louder.

Relative to the signs, I should also state, that there are other essential differences between the simple nervous, and the organic and complicated asthmas. In the simple nervous forms, no dyspnœa or local signs of organic pulmonary lesion remain after the paroxysm is over; whilst in the organic and combined, the patient is always affected with more or less difficulty of breathing; and there constantly exists afterwards some local sign indicating a material change in the bronchial or parenchymatous structure of the lungs.

After repeated attacks of nervous asthma, some organic pulmonary or cardiac lesion, or both, most frequently supervenes. Dry catarrh is the most common consequence, although the other forms of catarrh are not unfrequent. If the asthma has been of long duration, emphysema of the lungs is an inevitable result. The cardiac lesions we shall advert to when we arrive at the description of diseases of the heart.

Remote Causes of Asthma.

The remote causes of organic asthmas are precisely those of catarrhs. I refer you to that subject.

The remote causes of nervous asthmas are evidently those which are considered to act upon the nervous system. The disease attacks peculiarly persons of a nervous or irritable temperament. The principal causes are as follow:—Emotions of the mind, venereal excesses, the presence of a strong light, or the absence of light. A paroxysm of asthma has often been induced by certain odours—as of the tuberose, the heliotrope, of masses of apples, the smoke arising from the snuff of a candle. If a body be moved before the face of some persons, they will immediately feel a sense of closeness and suffocation. A very opposite cause will bring on the attack occasionally. Laennec mentions the case of a gentleman who, in riding on horseback, arrived at an extensive plain; as he proceeded upon it, gradually a sense of suffocation came on; he returned, and the sensation went off. He again attempted to proceed on his journey, and the dyspnœa again returned. He finally was obliged to give up all thoughts of proceeding onwards. A young friend of mine cannot touch ipecacuanha without being thrown into a violent paroxysm of asthma. Certain associations often produce the fit. Dr. Bree, in his excellent work on this disease, states, that after having suffered a severe asthmatic attack on a certain spot, he could never pass it without experiencing its renewal. I have met with similar instances. I have known strong green tea to produce the disease violently. I knew, also, two clergymen, on whom the paroxysm was arrested by active mental exertion; for in ascending the pulpit, the dyspnœa gradually disappeared, and they improved in voice as they warmed with their subject.

Treatment.—Continued Chronic Difficulty of Breathing.

I need not allude to the treatment of continued chronic dyspnœa, since I have already described it in speaking of the various diseases which produce that effect.

Asthma, or Intermittent Difficulty of Breathing.

1. *Asthma from organic causes.*—The treatment in these cases must be directed to the paroxysms, and to the intervals between them.

Chronic mucous, or pituitous catarrhs.—As the paroxysm of asthma from these causes depends upon a sudden accumulation of secretions in the bronchial tubes and air cells, our indication is to promote as free

Hysteric delirium. — Commencing with obvious signs of hysteria; of uncertain duration, from a few hours to many days; ought to be discriminated from true mania, in which hysteric symptoms rarely occur, even in those who have previously been liable to the disease.

Other varieties of this exist, as obstinate valetudinarianism and despondency, combined with hysteric symptoms.

4. Hysteric Sopor. — Apparent insensibility to external objects; inaudible respiration; resembles death. The patient may be roused by completely closing the lips and nostrils.

5. Hysteric Pains. — Often imitate inflammation of an important organ or texture; generally other hysteric symptoms present; also leucorrhœa, or derangement of the menstrual function. Some great incongruity in the symptoms leads to the detection of the real nature of the affection, more particularly absence of that peculiar depression of countenance which characterizes inflammation of some important internal organ.

Hysteria imitating pleurisy. — Pain most acute, generally under the left breast, increased on pressure; respiration panting; pulse rapid, variable.

The following well-marked case will serve, in some degree, to illustrate this form of hysteria in all its varieties: — Miss D.'s servant, aged 22, a healthy delicately formed Irish girl, possessing a face and mien that would have graced a higher station. During the catamenia, which had always been regular, was obliged to sit up a whole night attending on her mistress, who was affected with violent hysterics; in the morning went to the wash-tub, caught cold, and suddenly ceased being unwell. The following day I was requested to see her, when I found her in bed slightly feverish, panting rather than breathing, complaining of acute pain under the left breast, to which place she kept her hand constantly applied. Pressing the part with my finger appeared to cause exquisite pain. The pulse was rapid, and the tongue furred; there was a degree of tremor of the hand as I was feeling the pulse, and her manner was restless. Blood was drawn to the amount of sixteen ounces, which produced faintness, and appeared to give relief. On the following morning I found all the symptoms aggravated; the pain in the side intense, and respiration performed with great action of the chest. At my entrance the pulse was rapid; but on feeling again, before leaving the room, the frequency was greatly lessened. A blister to the side was ordered. The following day she was better, and had had a return of the catamenia. On the fourth day of my attendance she had an hysteric fit in the evening. The day following that, the pain shifted to under the right breast, and was so intense that an attendant was obliged constantly to press the hand on the part. The respiration was violent panting, the pulse was rapid and variable, and the hand tremulous. A smart purgative was ordered, and to be followed by frequent small doses of carbonate of ammonia. I had no sooner left the room than she was seized with violent hysterics. Next morning every distressing symptom had entirely vanished.

Although I should not have felt justified in omitting venesection in this case, I question whether it was beneficial. It certainly sometimes happens that inflammation of an important organ and hysteria co-exist. The practitioner ought, therefore, always to act on the safe side; never forgetting, however, that a constitution disposed to hysteria is comparatively little liable to inflammatory affections.

Hysteria imitating hepatitis. — Pain and acute tenderness on the right side; attack sudden; pulse may be quick, but is not hard.

Hysteria imitating peritonitis. — Seizure not gradual but sudden; tenderness most acute, particularly on a light degree of pressure.

Hysteria imitating hysteritis. — Pain in the uterine region extreme; greatly increased on light pressure; patient more restless and active than in true hysteritis.

Hysteria imitating pericranitis. — Excruciating pain of scalp, with extreme tenderness; vomiting; intolerance of light; pain variable, and frequently confined to one spot.

Hysteria imitating arthritis. — Wrist may be the seat; commences with slight swelling and great pain, which may continue long; the wrist becomes drawn and rigid, the hand wasted, the surface exquisitely tender. If in the knee, it is semi-flexed, and there is slight tumidity, acute pain, exquisite sensibility; generally the joint may be moved in sleep

without producing evidence of painful sensation.

6. Hysteria that is voluntary.—A power, possessed in rare instances, of bringing on at will a paroxysm of spasmodic hysteria.

7. Hysteria in the Male.—Chiefly of an irregular kind, as flatulent suffocation, palpitation, mental excitement, with *globus*, and limpid urine, &c., seldom reaching to convulsive action of the voluntary muscles, *i. e.* to a regular fit*.

It may very naturally be asked, how the practitioner is, in all instances, to distinguish between symptoms that are hysteric, and such diseases as epilepsy, tetanus, trismus, hydrophobia, mania, chorea, palsy, catalepsy? The reply is, that the task of diagnosis, although generally easy, is occasionally difficult, and sometimes, perhaps, impossible; nevertheless, it is to be performed somewhat in the same way as the naturalist proceeds to distinguish animals from each other that are of the same order and family,—as, for example, the dog in all its varieties from the fox, the wolf, the jackal,—viz. by observation, and patiently noting and comparing the traits of individual character, by which it is at length discovered in what traits there is agreement, and in what, essential difference.

It is admitted on all hands that some are more liable than others to the hysteric affection, although, I believe, it is likewise commonly assumed that *all women*, without exception, may become its subjects, if they are only sufficiently long exposed to the exciting causes. This is an opinion that *I* do not entertain; on the contrary, I hope to be able to prove, that liability to hysteria is confined to a certain proportion of the sex, the remainder not being, under any circumstances, susceptible of it. But waving this question, to which I shall have occasion to return, let us give a moment's attention to the peculiarities of constitution which distinguish such as are *known* to be liable to hysteria. It would be little less than impertinent were I to attempt a sketch of these peculiarities, since it has been drawn with so free, bold, and vigorous a hand, by Burton, in his Anatomy of Melancholy. His pencil, it is true, is not the most delicate, but we are to remember his delineation is intended for the *manifestly hysteric*, and not for the fainter, more evanescent, traits discovered in such as are rarely affected, and then only when subjected to powerful exciting causes. Women given to be hysterical, he remarks, "complain many times of a great pain in their heads, about their hearts, and hypochondries; and so likewise in their breasts, which are often sore. Sometimes ready to swoon, their faces are inflamed and red; they are dry, thirsty, suddenly hot, much troubled with wind, cannot sleep; and from hence proceed a brutish kind of dotage, troublesome sleep, terrible dreams in the night, a foolish kind of bashfulness in some, perverse conceits and opinions, dejection of mind, much discontent, preposterous judgment. They are apt to loathe, dislike, disdain, to be weary of every object; each thing almost is tedious to them. They pine away, void of counsel, apt to weep and tremble; timorous, fearful, sad, and out of all hope of better fortunes. They take delight in nothing for the time, but love to be alone and solitary, though that do them more harm; and thus they are affected so long as this vapour lasteth; but by and by as pleasant and merry as ever they were in their lives; they sing, discourse, and laugh, in any good company, upon all occasions; and so, by fits, it takes them now and then, except the malady be inveterate, and then it is more frequent, vehement, and continuate; many of them cannot tell how to express themselves in words, or how it holds them, and what ails them; you cannot understand them, or well tell what to make of their sayings."

These "sayings," and other indications of hysteria, are manifested in very different degrees in different women. In some they are seldom to be perceived, while in others they are rarely ever wanting in all their intensity. In the most robust and muscular they are witnessed, as well as in the slender and delicate, though doubtless oftenest in the latter. The moral disposition, too, of this portion of the sex is extremely varied, a number being of feeble capacity, while the generality are of lively parts, but, perhaps, wanting in steady

* The reader who takes the trouble to consult Dr. Pomme's "Traité des Affections Vapeureuses des deux Sexes," will be astonished at the great number of forms of disease to which, even in his day, the title "hysteric" was annexed.

application. Many, however, possess singular vigour of intellect, brilliancy of imagination, great ardour of affection, and a susceptibility of the most generous emotions; gentleness being the only estimable quality in which there is deficiency; and even the latter remark is not without exceptions. That in not a few the temper is wayward, fickle, capricious, irritable, impetuous, unamiable, and the spirits in most exceedingly variable, must be conceded; nor can it be denied, that nearly all the most famous impostors of the female sex have manifested symptoms of the hysteric constitution.

If we are to believe the ancients, the whole variety of symptoms classed under the title hysteria originate in a morbid condition of the female generative system. This notion is embraced by Dr. Cullen, who asserts that physicians have at all times judged rightly in considering this disease as an affection of the uterus, and other parts of the genital system. Writers since his time have affirmed that the uterus alone is the seat of hysteria; in other words, that it depends on some form of derangement of the menstrual function. Several regard the disease as "an affection of the brain;" and Professor Burns ascribes it to excitement of the nerves at their origins, produced directly, or by sympathy, from irritation at their extremities. Doubtless it is desirable both to know, and to make known, the causes of things, whenever we can; but vague conjecture is a poor resource in science. These opinions cannot all be correct; and probably they are all equally unfounded. They have apparently originated in a partial and very limited view of the phenomena of hysteria—in the common error, I may say, of regarding one or more symptoms, ordinarily present in a disease, as essentially characteristic, and indicating its nature and origin. In a majority of hysteric attacks, there can be no question that the menstrual function is either deranged or suspended; but then in many other instances this is not the case; and in others, again, derangement of that function is impossible, as the menstrual period is either not yet attained, or is terminated. Besides, there is another class of facts that ought not to be overlooked; every variety of diseased menstruation occurs without producing hysteria, producing in some women little serious disturbance of the health, and in others chorea, epilepsy, or mania, according to individual predisposition.

But it may be said, if hysteria does not depend on the uterine system, how happens the disease (as is commonly taken for granted) to be confined to the female sex? The proper reply is, that hysteria, though chiefly, is not altogether a disease of women. Several well-marked instances I have myself seen in males, as, for example—

1st. A gentleman, whose sister is highly hysteric, was unexpectedly plunged in a sea of business-trials, which laid him up with an intensely painful affection of the head, that excited fears for his life, it being imagined that the meninges of the brain were inflamed. At times he could not so much as bear the scalp to be touched, and often felt a most acute pain darting through the head, from one parietal protuberance to the other, as if a nail were driven. Meanwhile there was great despondency, and apprehension of death; a feeling of distension at the præcordia, and a sensation of sinking; distinct *globus*, excessive flatulence, and deranged bowels. The pain of the head occurred in paroxysms, preceded by a peculiar feeling in the stomach; and the accession of the paroxysm could generally be prevented by taking food. Relaxation from business, purgatives, quinine, and change of air, ultimately effected a cure. These symptoms in a female would have been considered hysteric.

2d. Mr. B., 22 years of age, of puny stature and pallid face, by trade a watchmaker, complains of all kinds of pains, and is a regular grumbler; fancies now and then he shall tumble over as he sits at his work; the appetite is variable, and the bowels constipated. At times he has marked *globus hystericus*, which seizes him sometimes in the street, and then he feels as if he must be suffocated. At the periods of these attacks he voids large quantities of limpid urine. His aunt, who is strongly predisposed to hysteria, says (justly, I think) that her nephew is troubled with the "family complaint."

Other cases I might relate, as several equally well marked have come under my notice; and it would be easy to quote a great number of unexceptionable

examples from the works of writers perfectly worthy of credit. However, the following statement of Dr. Trotter, which occurs in his *Medicina Nautica*, will suffice in proof of the existence of *hysteria masculina*. "We found," says Dr. T., "not a few of the cases sent to the hospital-ships subject to very frequent fits of hysteria, and, where this singular affection occurred, with as much violence of convulsions as we have ever marked it in female habits, attended with globus, dysphagia, immoderate risibility, weeping, and delirium*."

Were hysteria, however, a disease of women alone, this would furnish no decided argument for its origin being in the uterine system; for surely the conformation and temperament of the sexes are sufficiently dissimilar to warrant our belief that there may be diseases peculiar to each. It cannot be doubted that the nervous system exercises a far more marked influence in the female than in the male: hence the former is susceptible of a thousand impressions which the other sex, if not exempt from (and this, of course, cannot be predicated), generally receives with little manifestation of feeling. In a mixed assembly, subjected to the moving tones of oratorical declamation, particularly if the tenderer emotions, or those of a religious kind, are powerfully addressed, how different the effect! Among the females there will probably be sobbing, or even fainting, when nothing of this is perceivable in the men. The words of the declaimer fall, it might seem, on two distinct classes of intelligent beings, whose moral and physical susceptibilities, although not radically different, differ strangely in degree. Were hysteria, therefore, a disease solely of females, there are other grounds on which its existence might be explained, without needing to suppose that it always originates in a morbid condition of the generative system†.

That hysteria is "an affection of the brain," is a no less untenable opinion, yet having this in its favour, that it is exceedingly vague; and as an eminent writer has well remarked, no opinion is so incontrovertible as that which is unintelligible. From whatever *causes* hysteria may be supposed to proceed (and surely they are manifold), there has never, that I know, been any dispute in regard to its *seat* being the nervous system; for it is manifestly a disease of mere sensations and disordered functions. The brain, therefore, is doubtless occasionally affected in common with the other organs; and often the brain would appear to be chiefly affected. But in frequent instances the function of this organ is very little impaired; while the stomach, the larynx, the pleura, the peritoneum, the liver, the kidneys, or perhaps a remote joint of an extremity, is the part that suffers.

It will aid us in perceiving how readily other parts of the nervous system, besides the brain, may become the seat of the hysteric affection, to remark, that we have reason to believe that, in different individuals, the nervous system differs in regard to the situations of its weak points, some persons being liable to painful sensation, or impaired function, in *this*, and others in *that*, point; just as happens with respect to the other systems—the glandular, for example. Exposure to cold, we know, will in one affect the tonsils, in another the liver, in a third the sub-lingual and sub-maxillary glands. After the same manner, a piece of unpleasant news will produce, in one person, pain at the præcordia; in a second, looseness; in a third, tumor and palpitation of the heart; in a fourth, a stitch; in a fifth, headache. Some, on seeing a ghastly wound, or a formidable cutting instrument, as a newly-whetted scythe, feel an acute pain in the perineum, in the line of the urethra; a disgusting object or idea, in some, excites the stomach to vomit; a discordant sound causes the teeth to ache; an indigestible meal temporarily paralyzes the optic nerve, or produces tic douloureux, or pain and tenderness of the calves of the legs. The "natural history" of bashfulness, to employ a modish phrase, affords us abundant examples: in one the larynx is the weak point, and we have stammering; in another it is the lips that are unmanageable, and then there is mispronunciation; in a third, the demon lurks in the optic nerve, and there is the abashed averted eye; in a fourth he prefers the legs, and then the gait is the dance of St. Vitus; in a fifth the brain is his throne, and now the wise man is thrice

* See an interesting case of Hysteric Loss of Voice in a Male, in which the above extract from Dr. Trotter is given, by Mr. Watson, Edinburgh Medical and Surgical Journal, vol. ii. p. 303.

† See article "Imitation," Rees's Cyclopædia, and the Edinburgh Medical and Surgical Journal, vol. iii.

a fool. Facts of a similar description, tending to illustrate the pathology of the nervous system, are almost infinite in number and variety; they appear to indicate distinct local affections of that system; and more than this, I apprehend, we may not venture to affirm. Our knowledge of the functions of the different parts of the nervous system, in a state of health, is inexpressibly limited and imperfect; more so, if possible, is our knowledge of the morbid conditions.

The hypothesis of Dr. Burns calls for little remark. In hysteric females there is often tenderness on pressure in the course of the spine, as well as pain at the nape of the neck, and over the occiput, indicating, perhaps, what the Professor calls excitement of the nerves at their origins; but in how many cases are there the same tenderness in the spine, and the same kind of headache, without the presence of hysteria; whilst there are many instances of this disease without there being the slightest evidence of the existence of irritation of the nerves at their origins.

If I am asked what is the seat and origin of hysteria, I find it convenient, in return, to put a similar question in reference to scrofula; because a reply to the latter query, which refers to a less complex and more palpable disease, will assist me in explaining my views of the nature of hysteria. The term scrofula is applied to an inflammatory affection, characterized by tolerably well defined features, seated sometimes in the skin, sometimes in the subcutaneous tissue, or in the lymphatic glands, — in the bones, cartilages, ligaments,—which, in fact, has been discovered affecting every organ and texture of the body. I further find, that this disease is thought to appear only in certain constitutions; and consequently, that the causes which produce it in one class of persons fail to produce it in another class, even although they may operate on the health, to the production of some disease of a different kind. Hence arises the notion of individual predisposition; in other words, that certain persons possess a conformation of the whole body, or of certain organs only, tending, under the influence of particular exciting causes, to originate scrofulous disease; and this notion is further strengthened by observation, which has discovered, in such as were already affected, certain physical peculiarities, that enable us frequently to detect the same predisposition in those in whom the disease may never have appeared. More than this of the origin and nature of scrofula we cannot, I apprehend, ever know. We cannot tell, for example, why that particular conformation, called the strumous, leads to scrofula rather than to gout: we know the fact from observation, and farther than observation guides we cannot proceed. No doubt, if we will, *we may conjecture.*

The same line of reasoning will, in a measure, apply to hysteria, which, however, is a totally different kind of disease, being in its nature, as I have already said, purely functional; meaning by that term that it is to be detected only in the living body, and never produces changes of structure discernible by post-mortem dissection, whilst scrofula is, essentially, a disease of structure, always changing or destroying the textures it affects. In the diversity of organs and parts in which it fixes its seat, as well as in the diversity of its character, hysteria equals or surpasses scrofula. That the former also can occur only *in certain constitutions*, is, I think, capable of the strongest proof; for I find from diligent observation, that those causes which are found to excite hysteria in certain women, entirely fail to excite it in others. Not only so (for this might be owing merely to difference in the degree of predisposition respectively possessed), but we shall witness the latter class exposed again and again, for years, to the most powerful exciting causes—grief, disappointment, extreme fatigue—and not without injurious effects; the effects, however, in no instance partaking of the nature of hysteria. Such a view, it may be said, admits of presumptive proof only. Be it so: the same may as justly be said with respect to the proofs in favour of a peculiar predisposition to scrofula. If it be affirmed of certain women who have always resisted the ordinary causes of hysteria, that they, nevertheless, are susceptible of the disease were they only for a sufficient period exposed to the influence of the most powerful causes, it would only be needful to reply, that this is to beg the question. Many women, to my knowledge, have suffered intensely, both in mind and body, from those very influences which are known the most readily to produce hysteria;

and have yet, at no period of their lives, exhibited a single hysteric symptom. This fact I regard as sufficient evidence of their not possessing *that peculiar kind of physical conformation* (be it what it may) which predisposes to hysteria: precisely as I should with confidence infer, if a number of young persons had been greatly, and for years, exposed to the ordinary causes of scrofula—humidity, filth, confinement, and poor diet—without that malady appearing, that they were free from predisposition to it.

[To be concluded in our next.]

CASES IN MIDWIFERY.

To the Editor of the Medical Gazette.

Sir,

Should you think that the enclosed cases may interest any of your obstetric readers, I shall feel obliged by your inserting them.—I am, sir,

Your obedient servant,

James Reid.

10, Bloomsbury-Square,
Dec. 22, 1834.

1. — *Case resembling Rupture of the Uterus.*

I was called in, by one of the midwives attached to the Parochial Infirmary of St. Giles and St. George, Bloomsbury, to visit Mrs. O'Keefe, æt. 37, residing in Smart's Buildings, Holborn. The following is the history of her case:—

May 31st.—She has nearly gone her full time, and has enjoyed good health throughout her pregnancy. This morning, about 10 o'clock, she carried a heavy pitcher down stairs, in order to fill it with water, and, before returning, visited the water-closet in the yard, her bowels having, the previous night, been much deranged, owing to her partaking of some fat broth at dinner. This frequent action of the bowels was accompanied by great pain, and the child had been particularly strong in its movements during the whole of yesterday.

Whilst straining, she suddenly felt most acute pain in the abdomen and back, and thinks that she must have fainted away for some time. She then became very sick, and soon after was assisted up stairs with much difficulty. The midwife, on her arrival, found her in a very low state, with pallid countenance (although naturally of a florid complexion) and feeble pulse, and administered cordials, but with no benefit.

I visited her at 7 P.M. and found her complaining of severe pain in the abdomen (especially on pressure), and likewise in the back; it resembles labour-pain (she says) somewhat, but with no intermission. She vomits whatever her urgent thirst compels her frequently to drink; complains of pain and vertigo in the head; a great degree of faintness coming over her at intervals, attended by cold clammy perspiration. Her pulse varies, being sometimes extremely feeble, at others approaching somewhat nearer to the natural standard. She is very restless; her extremities cold, and an expression of great anxiety depicted in her countenance; respiration oppressed. She has passed very little water within the last twelve hours, and she has not felt the child move since last night. On examining the os uteri, I found it high up and very little dilated. No part of the child could be distinguished, neither could I, on attentively examining the abdomen, discern any projecting part of the infant through the parietes. A catheter was passed, by which a small portion of urine was evacuated, and a turpentine enema produced little or no effect on the bowels.

9 P.M.—The patient continues in almost the same state. I now caused her to be placed on her back, her knees to be raised and separated far apart, in order that I might more freely examine the state of the womb. I could thus distinguish the os uteri rather more dilated than before, and the membranes tense, as we find them in ordinary cases during regular pains; which latter, however, were here absent. As the woman still complained as much as before, and the attendants thought her sinking, I judged it proper to rupture the membranes with my nail; which I accordingly did, and an immense gush of liquor amnii followed; to the extent, I should think, of three or four pints. She was immediately relieved of the sickness and pain in the abdomen, and revived much in the course of a few minutes. I gave her ʒss. of vin. opii, and as I now expected, contrary to my former opinion, that the case would terminate well, I left her in the charge of the midwife. Regular pains came on,

after a short time had elapsed; at two o'clock in the morning she was delivered of a dead child, and did very well afterwards.

I have never seen any case which resembled one of rupture of the uterus more closely than the foregoing. A medical friend, who accompanied me on my second visit, had no doubt of the fact; and I must confess that I could hardly, at the time, give any satisfactory reason for not concurring in this opinion, unless it was that the pulse occasionally seemed to rally a little. I had another reason for doubting it, however, on finding the membranes tense, as I should naturally have expected them to have been otherwise, supposing the uterus to have been lacerated; in which case it would have been most probable that they had shared in this rupture, and that their contents had escaped into the abdomen. The fibres of the uterus seem to have been unable to exert any contractile efforts, until the over-distension was removed by the escape of the liquor amnii. The friends of the patient felt quite assured that she was dying, and the Catholic priest had arrived to administer extreme unction, which he deferred doing, however, until I had given an opinion that she could not possibly survive: this I hesitated to offer, and eventually had reason not to regret having thus acted. I find in my note-book, a case that occurred in our Infirmary, in which the progress of labour was impeded by the large quantity of liquor amnii contained within the uterus (far greater, indeed, than in the present one), but in which none of the above symptoms were present.

2.—*Case of Tubal Fœtation.*

The following is a case to which I was called during the absence of my neighbour, Mr. Walker; by whose permission I insert it.

March 22, 1834.—Mrs. H——, æt. 35, of delicate constitution, has already borne two children, the younger of whom is now 7 years old. She has lately suffered much from occasional spasmodic pains in the abdomen, but has generally been relieved by aperients. Has not been regular for the two last periods, but is uncertain whether she is pregnant or not.

I was called to her this morning, at three o'clock, and found her suffering from violent pains at the lower part of the abdomen (apparently spasmodic). They were partially relieved by fomentations, cataplasms, and an opiate; but I was again called up to her at 6 A.M. as they had returned with increased violence. A stronger opiate draught than the last much relieved her. Twelve leeches were afterwards applied to the part, when Mr. W. on his return took charge of her. Castor-oil was administered, and by the following day the patient felt tolerably well, and free from pain.

24th.—Was attacked by violent pains in the head, attended with fever, for which twelve leeches were applied to the temples, and an aperient medicine given.

25th. — Vesic. Nuchæ. Rep. Haust. Aper.

She was now much relieved; gradually became better; sat up, but still kept her room, flatuleney being the only symptom which troubled her.

April 3d.—Much annoyed by an irritable state of the bladder, accompanied by ardor urinæ; the latter fluid being passed in very small quantities. Tragacanth and sp. æther. nitr. mitigated these disagreeable symptoms, but they were followed, on the 5th, by very acute pains in the left iliac region, for which she took tr. opii, 3ss. every hour: it required a third draught before they were relieved. A dose of castor-oil was administered the next day, but on the 9th the pain recurred, although in a less degree, and was removed by tinct. opii, ℥v. taken every four hours. As these unpleasant symptoms recurred so frequently, Mr. W. properly deemed it requisite that Dr. Spurgin should visit her with him, and a consultation took place on the 10th; but as the case still presented symptoms similar to those usually found in colic, it was concluded that they depended upon an unhealthy state of the alvine secretions, and a powder of rhubarb combined with magnesia, hydrarg. c. cret. and hyoscyam. produced very copious evacuations, after which she felt better.

16th.—She suffered from another similar attack, but more violent still than the former ones. She was again relieved by large doses of opium, but as her friends felt very anxious about her safety, Sir C. Clarke saw her on the 17th. After a careful examination, during which little or no tenderness was

felt on pressing the abdomen, he was likewise of opinion that the prognosis was favourable, judged it most probable that she was enceinte, and recommended the combination of tonics with the medicines she was already taking.

18th.—At 7 P.M. seized with bearing-down pains (especially in the back) resembling labour, attended with much faintness. She feels sure that the waters have escaped, as she felt something burst, followed by a warm sensation internally. On examination, the os uteri is found quite closed.

10 A.M.—Pulse becoming very weak; on which account cordials were administered.

2 P.M.—Patient still more languid; pains continuing; and Mr. W. advised that Dr. Spurgin should again see her, fearing that if abortion should supervene she might sink under it.

3 P.M.—Dr. S., on visiting her, advised cupping-glasses to be applied to the loins, but no blood could be obtained. Though cordials were still administered, she gradually sunk, and at 4 P.M. was evidently moribund. She retained her senses to nearly the last, and at 5 o'clock expired.

Autopsy.—April 21st, I was requested by Mr. W. to examine the body, which I did in the presence of Dr. Spurgin and himself. From the symptoms immediately preceding death, we were led to expect that some internal hæmorrhage had taken place; and as it was most probable that she was pregnant, a rupture of the fallopian tube was casually mentioned as not unlikely to be found.

The body was not emaciated, but the abdomen was much swollen, and evidently contained fluid: the uterus could not be felt through its parietes. The mammæ were not enlarged, nor was there any areola round the nipples. On opening the abdomen, the omentum was found to present a greenish muddy colour, and it had formed many adhesions, principally to the pelvic viscera, which it required a little force to separate. The intestines presented the same greenish dull hue, with large patches of effused and organized lymph upon them, especially on the lower ones. A large quantity of dark blood and clots, to the amount of three pints, was found in the abdominal, but principally in the pelvic cavity. After removing this, and on detaching the adhesions of the omentum in the pelvis, a small portion of the left fallopian tube was torn away with them, and a fœtus, about the tenth or eleventh week, found in the abdomen. The uterus was rather enlarged; and on making a longitudinal section through it, a distinct creamy semi-solid coat was found lining its cavity throughout, small blood-vessels shooting through various points of it. The ruptured fallopian tube contained coagulated blood. The cervix uteri was much harder than usual, the mouth a little opened, and containing a glairy fluid. No aperture could be discovered connecting the cavity of the uterus with the ruptured fallopian tube.

Although the above case is not a very rare one, still it may serve as a warning to us, how difficult the diagnosis will prove occasionally in similar cases. It will be allowed that it is hardly possible to discover the presence of this dilatation of the tube until rupture has taken place, and symptoms of internal hæmorrhage are observable. Still the friends will be (as in the present case they were at first) dissatisfied with the judgment even of the most experienced practitioner who prognosticates a happy issue of the case the day before death occurs. A post-mortem examination had the good effect of entirely dissipating this unpleasant feeling, by pointing out that the most correct knowledge of what was going on internally could not possibly have saved the patient. I forgot to mention that that part of the uterus adjoining the dilated tube was increased in volume, as it was on this circumstance formerly that Mauriceau founded his idea of its being simple hernia of the uterus.

3.—*Instrumental Labour—Accidents—Recovery.*

The following case is inserted chiefly to shew what a succession of untoward symptoms a puerperal patient will sometimes surmount, though at others we find her sink rapidly, under circumstances which would not by any means lead us to suspect a fatal termination.

M. Davis, æt. 32, residing in Church-Lane, was taken in labour with her first child on Sunday, September 29, 1833. The pains continued strong all that day, I understand, and on the succeeding one likewise: no advance of the

head had taken place, however, although the os uteri was fully dilated; yet the pains having gradually worn off, I was requested by our principal midwife to visit the patient.

Oct. 1st, at noon.—On examination I found the rami of the pubes approximating much nearer to each other than usual, the arch projecting inwards; the child's head too was of large size, evidently causing great pressure on the soft parts. As it had rested on the latter for some time, and I had not much reason, from the conformation of the pelvis, to expect success in the use of the forceps, I judged it prudent to employ the perforator, especially as the child had not been felt to move for the two previous days, and there was a strong fœtor proceeding from it. The bones of the cranium were remarkably firm, and required some force in order to make an opening sufficiently large to evacuate its contents. It was gradually brought down by means of the craniotomy pincers (of Dr. R. Lee, I believe), which I have always found more safe and efficacious in these cases than any description of hook; but there was still very great difficulty in effecting the passage of the shoulders, owing to the size of the child. This I at length succeeded in, and the remainder of the body soon after followed. The shell which is generally used in our workhouse for infants was found to be too small, and a larger sized one than usual was sent for.

The placenta did not descend into the vagina as usual; and as at the expiration of two hours there was a disposition to hæmorrhage, I introduced my hand into the uterus, and extracted it from its adhesions to the fundus. The woman was remarkably patient and quiet during the whole time, hardly uttering a single exclamation. I ordered her to be kept as quiet as possible, and gave her 3ss. of vin. opii.

2d.—Going on tolerably well; pulse natural, but complains of pain in the lower part of the abdomen and in the vagina, her urine escaping on the least exertion. To have fomentations to the parts, and an aperient draught.

4th.—She was much better yesterday, and could pass her water voluntarily; but a severe cough, which she is now troubled with, forces it from her; and towards the evening she was again unable to retain it at all. Great pain in the vagina still continues. Symptoms of *pleuritis* on the right side have appeared, attended by difficult respiration and wheezing. Both breasts are very troublesome and painful.

Vesicat. Scrobic. Cord. Hirudin. viii. and fomentations to the mammæ, poultices to the vulva, and the patient to take mild laxatives.

6th.—Sloughs now came away from the upper and back part of the vagina; she was in a high state of fever, and towards evening a copious hæmorrhage took place, which, however, was checked by the acidulated infus. rosæ. Haust. diaphor. nocte.

By the 9th she was better in every respect, though a fœtid discharge still came away from the vagina. She now could pass her urine voluntarily, though not possessing perfect power over the action of the sphincter.

Ordered arrow-root and weak broth.

On the 17th she had recruited considerably. A more nourishing diet was allowed her, but was again obliged to be discontinued, owing to an attack of *puerperal phlebitis*, but by the immediate application of leeches, fomentations, &c., it was subdued after some days, and she at length recovered.

I heard nothing more of this patient till the 4th of the present month, Dec. 1834, fourteen months after her last confinement, when I was again called to her. Pains had commenced at 4 A.M., and the labour appeared to be going on well, the breech presenting, till, on its descent into the vagina, a substance in the latter presented a complete impediment to its passage, as I was informed by the midwife, who felt quite sure that it was not present during the last labour. I saw the patient at 11 A.M., and on making an examination, found a firm ligamentous band, about $1\frac{1}{4}$ inches broad, extending across the posterior part of the vagina, against which the breech pressed with great force at every successive pain, it proving an effectual obstacle to any advance. As it was clear that it depended on a cicatrix, the result of the sloughing after the former labour, and as clearly evident that it must be removed, I introduced a curved bistoury, guarded up to within half an inch of its blunt point with linen, using the forefinger of my left hand as a director, and divided it completely, without the patient being aware of it, as it caused her no pain. I saw her again in

an hour, as I expected the head would, as before, prove a source of difficulty, and found that the body of the child had been expelled in a quarter of an hour after I had removed the impediment to its advance, and that the midwife had since that time been ineffectually endeavouring to extract the head, having turned the face from the pubes, towards which it had presented, her left forefinger being introduced into the mouth to assist, but in vain. My repeated efforts, though made with caution, succeeded no better, part of the head resting on the projection of the pubes, which prevented its exit. As there had been no pulsation in the funis from the first, I sent for the crotchet; and having opened the head sufficiently, and obtaining a firm hold with it above the ear, I succeeded immediately in relieving it. The operation was nearly similar to that represented in Smellie's 36th plate. The placenta was passed soon afterwards, and the patient has had no further bad symptoms. I have recommended her, should she again become pregnant, to apply at the seventh month, as the induction of premature labour at that period may save her from severe suffering, and probably enable her to bear a living child.

MENSTRUATION AT ADVANCED PERIODS OF LIFE.

To the Editor of the Medical Gazette.

SIR,

I HAVE always considered menstruation as a very important function in the female economy. I deem it proper for medical men to lay before their brethren all unusual cases that may occur in their practice. Having been engaged more than twenty-seven years in public practice, and not having met, till within these few years, with any cases like the following, I think it right to send them to you for insertion in your publication. I have read the Medical Gazette since its commencement, but I do not remember any similar cases recorded in that periodical.

Sarah Johnson, aged 87, was attended by me, in the year 1830, in the workhouse of the Liberty of St. Andrew's, and menstruated freely, but she in a few days after died. She complained of considerable pain. The fluid did not coagulate.

1830.—Ann Lovell, aged 75, a patient of mine, in the Liberty of the Rolls workhouse, was attacked, the early part of this year, with violent menorrhagia. The common remedies, inf. rosæ, acid, &c., removed the complaint. The fluid did not coagulate. This woman has continued at irregular intervals to menstruate till the date of this communication: she menstruated last week.

Mary Waller, aged 67, placed herself under my care, in the Infirmary for the parish of Islington, also in the year 1830. She was then labouring under a violent attack of menorrhagia. The fluid did not coagulate. She continued two or three years on my list, and died from exhaustion. The usual remedies relieved this woman. It struck me as curious, that in three public establishments, distant from each other, three similar cases should have occurred in my practice.

Mary Dick, aged 80, was attacked, at her own residence, with an abundant flow of the menstrual discharge. When I saw her, she was in great pain. She said she had not been unwell for thirty years before. Opiates relieved her, and she finally got well. This case occurred in the year 1829.

Mary Brown, a nurse in Islington Infirmary, is at the present time menstruating: she is nearly 80. She says her menses ceased when she was 40 years of age. She has had the discharge now regularly for two or three years, and at monthly periods. Dover's powder relieves her.

Ann Lovett, about 80 years of age, a bed-ridden patient, now under my care in the Infirmary of Islington, bleeds one month at the nose, and the other month menstruates regularly: the menstrual fluid does not coagulate. When the menses cease, leucorrhœa appears. She requires aperient medicines, and occasionally zinc lotions. This patient's case is similar to Lovell's, mentioned already in this paper.

A female consulted me, about two years ago, for an attack of erysipelas on the face and arms. She stated that she menstruated at 17, and continued to be regular till 30 years of age, when the catamenia finally disappeared. She was, at the time when under my care, 44.

In the year 1833, Mary Owen, aged 77, a pauper patient in the workhouse of the Liberty of the Rolls, was placed under my care, with an abundant menorrhagic discharge. She was in much pain. She had not been in such a state, she said, for these last thirty years. In a few days, however, she died.

1833, Aug. 31st.—Charlotte Kiernan, aged 71, a pauper patient in the last-mentioned institution, applied to me, with abundant coloured discharge from the uterus. She was in much pain. Purgatives and opiates relieved this female. She told me she "was in the same state that she was when at the age of 20." This woman is now quite well.

Mrs. Gray, a nurse at one of the public institutions under my charge, aged 55 years, told me, that seven years ago her menses ceased, but for five years she had a monthly discharge of blood from the nipples. Her health was unimpaired.

It is the general opinion, that when aged females are attacked with this peculiar discharge, they are sure speedily to die. My experience does not warrant me in forming this conclusion, for several of my aged patients subject to this infirmity are now as well as ever they were, and very likely to continue so; nor do I think they will die, except from extreme age.—I am, sir,

Your obedient servant,

ROBERT SEMPLE,

Member of the Royal College of Surgeons in London, &c.

2, Rufford's-Row, Islington,
Dec. 23, 1834.

ON CLUB-FOOT.

BY PHILIP M. LYONS, M.B. A.M.

Physician-Accoucheur to the Brighton Lying-in Institution, &c.; late one of the Physicians to the Brighton General Dispensary.

THE appearance of the accompanying paper in its present form requiring some explanation, I trust the following remarks will not be deemed irrelevant. When I commenced an essay on "Crural Deformities," with the intention of offering to the profession the results of my own experience, I was comparatively very slightly acquainted with the opinions of others on this subject. As I proceeded in my inquiry, finding that but little original information was to be obtained from the major part of those of our own country who had written on this subject, and as a great difference of opinion existed amongst the most approved foreign authors, both as to the pathology and practice, whilst the procuring of their works was attended with much difficulty, I was induced to think, that a paper containing a condensed history of the most interesting facts and opinions recorded by such authors as I had been able to consult, given as nearly as possible in their own words, and in which such facts and opinions would be compared not only with each other, but also with other parts of the works of their respective authors, might not be deemed uninteresting to such practitioners as had not leisure or opportunity to pursue a similar course of study. Cruveilhier, in the part of his work on Morbid Anatomy devoted to club-foot, has adopted an opinion, and supported it by his individual observations, which is so completely opposed to those of Duverney, Scarpa, Delpech, and many other modern writers both practical and pathological, and which, if established, would so materially affect the question of the practicability of cure after the very earliest periods, as to render it a matter of the utmost importance to those interested in this class of diseases, to be intimately acquainted not only with Cruveilhier's opinions, and the facts they are based on, but of those also who have taken a different view of the question. I shall therefore make no farther apology for embodying in this paper rather extensive extracts from such authors as I may deem it desirable to quote, and which, by being contrasted one with the other, shall, I trust, enable us to deduce conclusions that will justify us in discarding, at least to a considerable extent, the present mode of treatment, and in substituting one more rational, more nearly allied to surgery, and which claims as its original recommender the illustrious Hippocrates.

It is not my intention on the present occasion to enter into any investigation as to the remote causes of varus; I shall therefore at once proceed to consider the subject, as presented to us at birth. Distorted feet were classed by the ancients according to their principal characteristic marks, into two species: varus, or

proper club-foot, in which the plantar surface is turned obliquely upwards and inwards, and the dorsum inclined downwards and outwards; and valgus, or reel-foot, whose distinguishing marks are directly the reverse. Scarpa subsequently added another, termed, from an imaginary analogy, *pes equinus*, or pointed toe, the phalanges being in some cases bent downwards, and partly backwards under the tarsus; and still more recently, Maisonabe has described another, in which the metatarsus and phalanges occupy a position exactly the reverse of that in pes equinus. To the species already described I shall beg to be permitted to add another, which I do not recollect to have been described by any writer whom I have been fortunate enough to consult, and which, by an analogy similar to that adopted in pes equinus, I shall designate *torquipes*, or swing-foot. I purpose making a few remarks on this subject towards the close of the present paper, and by means of it, endeavouring to illustrate the views I entertain concerning that class of diseases of which it forms a species.

Writers have arranged distortions of the feet under two heads, congenital and accidental. Delpech, arguing upon a theory the nature of which will be explained as we advance, has subdivided them into primitive and consecutive. The older writers seem in general to have entertained the opinion that those deformities were to be attributed to a malformation, or at least irregularity, in the shape of some, if not all, of the bones that entered into the composition of the leg and tarsus; an opinion which Scarpa*, in his work on Distorted Feet, has completely refuted, at least in those particular cases which he observed and dissected. These observations led him to consider, "that the essence of this congenital deformity consists in the twisting of the os naviculare, of the cuboid, and of the calcis, around their smaller axis, into which morbid direction are drawn the cuneiform bones, those of the metatarsus, and of the phalanges of the toes. For this malposition Scarpa does not attempt to account, though he denies the explanation given by Duverney in his "Traité des Maladies des Os," who says that "distortions depend solely on the unequal tension of muscles and ligaments, as those which are remarkably tense draw the limb towards them, whilst the others, by their relaxation, give way to them." This opinion was also entertained by Boyer, as evidenced in the following passage of Dr. Farrall's translation of his work "Des Maladies des Os." "Club-foot is caused by an inequality in the respective force of the adductors and abductors of the foot, which inequality may depend on the position in which the fœtus is placed in the womb, or on the manner in which it has been treated after birth."

It seems also to have been adopted, though but to a limited extent, by Dr. Colles, who, in his very excellent paper on this subject, thus expresses himself: "For I apprehend there are not only different degrees, but different kinds of this deformity, and am convinced that the bones themselves, by being long *held* or *exercised* in an unnatural position, will become distorted." Mangolin also, in his able article on "Orthopédie," "Dict. de Médecine de Paris, 1817," alluding to the opinions of Scarpa, Boyer, Delpech, &c. thus expresses himself—"We conceive, very differently from those celebrated practitioners, that in some subjects the deformity owes its origin to an irregular formation of the bones of the tarsus, or even of a single articular face; at other times it may be the result of a defect in the equilibrium of the forces of the different muscles which move the foot, or a deficiency in length in part of them; but in others it can arise from the preternatural mode of insertion of one or more of the principal tendons which are attached to that limb. Once that the first element of distortion has begun to produce its effect, the deformity must increase each

* At the time I commenced this paper, namely, the early part of the winter 1832-33, I was not so fortunate as to meet Scarpa's work, and was solely indebted for a knowledge of that illustrious author's opinions to the truly valuable paper of Dr. Colles; and though I searched all the libraries, both public and private, to which I had access, I could not meet with but one copy (in Italian, and devoid of plates), which I found in the library of the College of Surgeons, London; but recently, through the very urbane and gentlemanly conduct, and kind exertions, of his able translator, the late Mr. Weisheart, of Edinburgh, I have been fortunate in procuring a copy of his most valuable and interesting, and I regret to add, too scarce translation. This gentleman (I am bound to observe), in a letter which I had the pleasure of receiving from him at that time, informed me that several cases had been successfully treated in Edinburgh by means of Scarpa's instruments, of which an accurate delineation is given in the work alluded to.

day, because several of the other causes unite to deform the foot. After birth, when the infants begin to walk, the weight of the body tends powerfully to increase the deviation."

Delpech, in his treatise on "Orthomorphie," takes a view of the subject in many respects very different from the authors whom I have just quoted. Each of the two first species of club-foot he divides, as I before observed, into primitive and consecutive, the former comparatively extremely rare; I shall therefore follow his own arrangement, and commence with the latter; and that I may be the more intelligible, will avail myself of the author's own words:— "The three species of deformity, though founded upon a difference in form, are capable of being reduced to the same principle. It is unusual to see varus in new-born infants to the same extent that we find it in after life. At birth, or soon after, the foot is commonly inclined downwards; this inclination increases by little and little, until its axis completely enters the direction of that of the leg; the point of the foot is inclined of itself to one or other side, particularly when the little one walks, at first slowly, and more frequently inwards; the heel follows in the same direction; the whole of the foot becomes inverted; and by slow degrees we see it form an enroulement, or doubling, upon its plantar surface, and inner or outer edge, as the case may be."

Such, according to Delpech, is the course that all cases of consecutive varus, or valgus, run; commencing in trifling displacements, they gradually increase until they become decided specimens of the third species, or pointed toe. The foot then taking an inclination inwards or outwards, gives the distortion a new character, which the weight of the body, now coming for the first time upon the legs, renders confirmed club or reel foot. He considers the cause of the original displacement always to be found in a contracted state of the tendo Achillis, with a considerable degree of tension of the muscles of that tendon, in consequence of which the posterior portion of the os calcis is drawn upwards, and obliquely inwards or outwards, according to the character of the deformity. The correctness of this observation he thus endeavours to prove—"If, in young subjects, we divide the tendo Achillis, we can easily restore the foot to its natural position, without leaving any alteration or trace of defect. In more advanced ones it is not sufficient to give this liberty in order to reduce the foot, as it leaves it to be restored but imperfectly; but even in these cases, if, after the division of the tendo Achillis, we offer violence to the aponeurotic and ligamentous structure of the sole of the foot, we shall find that the other muscles will afford us but very little resistance."

In explaining the appearances which the bones of the tarsus present on dissection, he particularly observes, "that the situation of the foot is such, that the inner edge of the pulley of the astragalus is alone lodged within the tibiofibular cavity; that the internal malleolus embraces in part the inferior surface of the astragalus, whose connexion with the calcis is very much relaxed; the interosseous ligaments are also much distended, particularly posteriorly;" and here he adds a most interesting pathological observation, though directly opposed to the facts and opinions of Cruveilhier:—"However, the normal form of the articular surfaces of the various displaced bones is not at all altered, though the inclination of some of them places them in contact with the synovial membrane of the opposite surface, and beyond the limits of the arthrodial cartilage." He subsequently thus explains his theory of the deformity:—"The shortness of the muscles of the calf is a general and primitive fact, and the *keynote* of the whole doctrine applicable to this part of the question; being comparatively too short, they resist the efforts of elongation made by the corresponding bones: hence the deviation of all the neighbouring articulations that can yield in their favour. Extension of the foot is the first consequence; subsequently, as an effect of this, follows the deviation *inwards*, because the calcis is naturally inclined a little to this side. In the rolled position of the foot, the muscles and aponeurosis being no longer solicited to elongation, in order to allow for the growth of the bones to which they are connected, these parts remain below of their natural dimensions."

To return to primitive varus and valgus. These exist completely formed at the time of birth, and are accompanied by tension of the different muscles,

which severally produce each of them; and which tension may be very much increased, even to the provocation of pain, by any effort made to restore the foot to its natural direction. The essential characters of club-foot, according to Cruveilhier, are—" first, the elbow, or angle, which the first row of the tarsus forms with the second. The first is on a line with the leg, the second with the rest of the foot: hence a very obtuse angle projecting forward. This elbow is the effect of a rotation inwards, which I compute at a quarter of a circle, suffered by the foot on its vertical axis. In the phalanges, metatarsus, and cuneiform bones, we find a change in direction, but none in form; their conformation is so perfect, that the least possible trace of their belonging to a club-foot is not to be detected. It remains, therefore, to examine the scaphoid, cuboid, astragalus, and calcis. The scaphoid, according to Scarpa, suffers most; but a glance at the different plates of various ages is sufficient to convince us, that it, like the tarsal bones of the first range, is drawn into a consecutive common deformity, but does not form any essential part of that deformity; it often touches the internal malleolus, and is united to it by a ligament, and sometimes even articulated with it. The most remarkable change it suffers is a diminution in size, an atrophy caused both by the severe compression which it experiences, and by the displacement of the head of the astragalus, a portion of which, sometimes only the one-third, and even the one-fourth, corresponds to the fossa navicularis, whence the smallness of this fossa. What has been said of this last bone also applies to the cuboid, whose posterior articular face is reduced two-thirds, because it does not correspond to that extent to the portion of the calcis to which it is adapted.

" The astragalus is evidently the bone which has suffered most deformity: hence we have not only change of direction but of form; the deformity is exactly proportioned to the degree of club-foot. This bone draws into consecutive displacement the entire of the foot; it is in general diminished in volume; in all cases it is displaced, the pulley looking completely outwards, the external articular face downwards, and the internal upwards; which last is almost, if not completely, effaced, and in its place we do not find aught but fibrous tissue. The articular cartilage of the pulley is sometimes in great part, in others completely destroyed. Compression in an improper direction is greatly the cause of this; but we must also blame the absolute immobility of the tibio-astragalar articulation, in consequence of which compression is always made on the same points. The head of this bone, if large in its natural state, is reduced to two-thirds, and sometimes to one-third, or even one-fourth; or rather a large part of it, which has quite left the hollow of the scaphoid, places itself beneath the skin, and forms a tumor larger in proportion as the displacement is more complete. In some rare cases progression is made, in part, on the head of the astragalus, which, by a very extraordinary transposition, becomes a substitute for the heel; and in this case osseous growths, frequently very considerable, spring from it. The calcis follows the astragalus in its displacement; it does not rest on the ground, except on its outer edge; it is also curved on itself from without inwards; its posterior extremity is deformed, diminished in bulk, approaches the posterior edge of the internal malleolus, and looks inwards; its anterior face has abandoned, in part, the corresponding one of the cuboid, and forms a prominence under the skin, which, sometimes enormous, becomes a substitute for the posterior tuberosity. The skin is then rendered thick and callous, and sometimes inflames in consequence of too severe friction: hence spring interminable ulcerations, and often caries and necrosis of the subjacent bones. Under the skin corresponding to the outer side of the tuber calcis, as under that covering the patella, is formed a *bursa*. The same circumstance occurs with the astragalus, when it bears on the ground. A second bursa, which is nothing more than a synovial extension of the astragalo-scaphoidean articulation, exists between the astragalus and the fibrous layer, which forms the superior ligament of that articulation. New-formed cartilages encrust those new vegetations, which now become exposed to friction. Thus we see in bones continued pressure the cause of atrophy, intermitting of hypertrophy. The plantar aponeurosis, following the law of that structure in all parts of the leg and foot, is remarkably thin; it does not oppose the extension of the toes, nor does the division of it facilitate the mo-

tions of the tarsus, or the restoration of the devious foot. If persons say this is the primary, but alteration of the joints the secondary and essential cause, I answer, *the dissection of a new-born infant gives me the same results as that of an adult.*

"None of the ligaments of the tibio-tarsal articulation present any thing particular in their appearance. On their internal side there exists, first, a superficial, lateral, ligamentous layer, extending from the internal malleolus to the astragalus and calcis; this was the internal lateral ligament, which is by no means shortened. Secondly, from the circumference of the articular face of the truncated internal malleolus, and even from the face itself, arises a ligament, which is attached to the circumference of the corresponding face of the calcis. This newly-formed, or rather accidental ligament, is extremely resistent, and requires a great effort to break it asunder; and I am convinced that, if not the principal, it is the first obstacle to the restoration of the foot.

"The astragalo-scaphoidean and calco-cuboid ligaments do not arise from the circumference of their proper faces, but from their new tubera, which tubera are in general encrusted with recent cartilage; the muscles are atrophied; fatty transformation of all the muscles of the leg and foot, even to the accessorius, prove that they can have no power in causing the deviation, and that Maisonabe and others are in error, who place the effective cause of the deviation in the want of antagonism, or in the relative predominance, sometimes original, sometimes acquired, of one or other set of muscles over their opponents.

"The internal gemellus, soleus, and external gemellus, preserve the character peculiar to muscular fibre, because the limb exerts some slight motion inwards by means of them. *In new-born infants the muscles are perfectly natural.* Having, at the end of seven years, examined a child whom I had seen when a year old, I observed that the atrophy of the muscles was *consecutive.* The muscular nerves, the sciatic and internal popliteal, principally, were extremely slender, and appeared as if reduced in their neurilemma. The vessels suffer a corresponding diminution in their calibre.

"In many advanced cases we have an alteration in the character of the bones of the leg, though they are generally straight in young subjects, and even in some adults. In some cases the internal and outer surfaces of both tibia and fibula are enlarged at the expense of the posterior surface, and form an angle forwards, as in rachitis. The inter-osseous space has almost completely disappeared in the lower part of its length; the tibia, inclined outwards, presented an oblique plane for the articular extremity of the femur; the cartilages of the outer condyle of the latter named bone, and corresponding face of the former, with the interposed semilunar cartilages, as also even the subjacent osseous layers, were all wasted away. The external malleolus is thrown outwards; the inner one is short, as if cut off horizontally at its base, but at the same time much larger than usual: its face, externally, presents a face which is connected sometimes with the scaphoid, sometimes with the calcis,—more frequently with the first,—by means of a loose symphysis, and occasionally of a perfectly formed articular face. The whole of this is consecutive. I reject, either as a primary or consecutive cause, the retraction, narrowing, or tension of the chief muscles; for in club-foot there is no luxation, predominance, retraction, or diminution of certain muscles or tendons. The great difference between an infant and adult is in the cartilaginous state of the astragalus, which, in the former, can more easily take a better direction than in the latter."

Such are the opinions and facts presented to us by Creuveilhier, and which I shall now proceed to compare with those of the other authors whom I have quoted, and by this means endeavour to arrive at some fixed data which may justify us in adopting such views of the pathology of the affection as will, I trust, lead to extensive improvements in the treatment, not only of this malady, but also of many other species of distortion, both congenital and accidental.

Scarpa states, that the essence of club-foot lies in the twisting of the os naviculare on its smaller axis; and that this twisting is the cause, and not the effect, of the contraction of certain muscles. But granting such to be the case in every species of varus, on what principles are we then to account for the distortions which we find to take place in the extreme and opposite kinds, as valgus, pes equinus, and that peculiar

reflected foot first described by Maisonabé, where the dorsum is turned obliquely upwards and outwards against the anterior and outer surface of the leg—a position of the limb which must have been produced by a different cause? In contradiction to this eminent professor, we have an assertion of Delpech, also based on pathological observation, that displacement of the astragalus is connected with the deformity; and that the essence of the disease is a contracted state of the tendo Achillis. But allowing this to be the case, and that pes equinus is the consequence, as Delpech asserts, what takes place next? The foot, he says, is inclined at first, and of itself, inwards;—an assertion subsequently qualified by his observing, that the tendo Achillis, having a natural direction inwards, gradually draws the heel into that direction, and thus turns the dorsum of the foot outwards and downwards. But supposing this to have occurred in the manner described, the result would be that varus must uniformly take place, and that valgus never could occur; even pes equinus could not exist for a moment after the tendency of the gastrocnemii to contract inwards had once commenced. But we know that both valgus and pes equinus, though not common affections, occur sufficiently often to establish the fact. The consequences arising from the division of the tendon do not appear to me to warrant the inferences Delpech would draw from them, since the weight of the heel, deprived of its support, would of course tend to drag into their proper direction those other muscles which were principally concerned in the deformity, and which, by the violence done to that tendon, had lost a powerful ally in their irregular action. With respect to the theory advanced by Delpech,—for an account of which I must refer my reader to the work above quoted,—we must acknowledge its ingenuity, while we utterly deny its correctness; for if a want of adequate and sufficient innervation were the cause, how could we account for a phenomenon interesting in itself, but doubly so as setting at rest this fanciful hypothesis—a phenomenon which has not escaped the observant mind of that sound pathologist and reasoner, Dr. Colles;—I allude to the extraordinary rapidity with which the muscles are developed in proportion as the limb resumes its natural position, and which I had occasion to notice in my own practice long before I had consulted either of those eminent writers. Cruveilhier has also completely refuted Delpech on this point, when he stated, that on examining a child at the end of six years, he found the wasting of the muscles consecutive. But he himself seems to have entertained almost as fanciful a notion, when adopting the opinion that deformities of this description were the result of pressure produced *by the fœtus upon its own limbs*, without reflecting that the arguments which he adduced against its being the effect of external pressure were equally fatal to his own views, as the tendency of the waters of the amnios must necessarily be to prevent resistance either *internal* or *external;* and without resistance there can be no pressure. Besides, were the facts as he states them, in what cases would we be most likely to find infants with club-foot? Would they not be where there was comparatively no water; or in cases of twins, where one or both children are born breechlings? Are such those in which they are generally found? As far as my own experience may be adduced, it contradicts this conclusion. But to proceed to a more practical, and therefore perhaps a more valuable part of his essay, he tells us, that the astragalus is the bone which has evidently suffered most deformity; that it has not only changed its position, but also its form; that the deformity is exactly proportionate to the degree of club-foot; and that the great difference between an infant and an adult, in this respect, is in the cartilaginous state of this bone in the former, which, therefore, can more easily assume a better direction. That this may occasionally be the case, must be acknowledged; and were we inclined to be sceptical, his dissections, as individual cases, must be allowed to be convincing. But when we find Scarpa announcing, as the result of his investigations, also made on infants, that the astragalus is not deformed, and likewise Delpech, a pathologist, declaring that the bones of the tarsus undergo no alteration in form—an assertion which, let us take it with what limitation we may, is still deserving of some credit,—if we do not fully concur in opinion with Duverney, Boyer, Maisonabe, &c., we must at least join with Isidore St. Hilaire in thinking that "though con-

traction of certain muscles may generally be but an effect, there is, however, nothing to prevent its being sometimes a cause; and we must not lose sight of the fact, that though in cases where inequality of force between antagonist muscles does not become very evident until after distortion of the tarsus, we cannot always affirm that a slight inequality has not preceded the distortion in the order of time, and contributed to produce it." The testimony of Colles also appears capable of being adduced in favour of those who deem it the effect of irregularity in the formation or action of certain muscles or ligaments; for while his dissection of a child aged five years, and another subject still more grown, do not prove to him the existence of congenital malconformation, his successful treatment of a child within the short period of eleven weeks,—and which, as he most ingenuously acknowledges, but for his too great haste, might have been accomplished in nine,—leads us to infer that malformation could not have been the cause of the deformity.

D'Ivernois also has succeeded in removing the deformity at the advanced ages of 35, 40, and even 50 years; though, as Marjolin, who mentions the circumstance on the authority of Bricheteau, acknowledges, the flexor muscles of the foot remained paralysed in those which we might almost term hopeless, and therefore require the constant use of the contensive apparatus.

I have myself, within an extremely limited period, succeeded in making an impression on limbs at the ages of eight, nine, and fourteen, as noticed in the cases detailed below—periods at which, if with Creuveilhier we were to look on the disease as the consequence of congenital malformation of the osseous part of the system, we might feasibly conclude that the distortions were utterly incapable of relief.

To these opinions I might perhaps be allowed to add those of Hippocrates, who, whatever he may be thought of as a pathologist, must be acknowledged to be without a rival both as a surgeon and symptomatologist; who, in his chaper "De Articulis," thus expresses: "There is also a very great difference in the ligaments themselves; since in some they are too relaxed, in others too contracted." And again: "For some of those luxations which take place at birth, *if they be not too much dislocated*, can be restored to their natural state; and particularly the articulations about the foot. Therefore the modes of deformity are not one, but manifold*."

As the result of a diligent comparison of all those observations, I think we may reasonably infer that though congenital malformation may be a cause of club-foot, we can also have the same affection as a consequence of some active or passive irregularity in the muscles and ligaments which are connected with the foot; an inference which, in my own mind, has become conviction, since I met with two cases of infants born with a distortion similar to that described by Delpech, where the foot is turned upwards and outwards against the fibula: one of those cases, slight in itself, was perfectly cured within the first week by the nurse, who, having gradually extended the feet, bandaged them in their natural position by means of a napkin. In the other I applied a small splint and bandage, and removed all appearance of deformity within the month.

[To be continued.]

OBSERVATIONS

ON THE

PATHOLOGY OF NERVES.

By Hugh Ley, M.D.

Physician-Accoucheur to the Middlesex and the General Lying-in Hospitals.

In the course of an investigation of the essential nature of the laryngismus stridulus, or crowing inspiration of infants, which has for some time engaged what of leisure I could command, I found reason to believe that this very peculiar symptom was generally, if not universally, owing to morbid enlargement of the thoracic or cervical absorbent glands, and that these acted by producing some injurious impression upon certain nerves which have an essential connexion with the respiratory

* Hippocrates, curante Vander-Linden. Tom. ii. Cap. De Articulis, Sect. 4, 51, 52.

I had almost forgotten to observe, that Baron Dupuytren, in his "Leçons Orales," seems to have entertained the same opinions as Delpech, and recommends a similar mode of treatment—namely, the section of the tendo Achillis; and still more recently, Dr. L. Stromeger, who appears to have practised successfully his own improved operation with the same object.—Dublin Journal, May 1, 1834; Archives General, Jan. 1834.

function, and directly influence the movements of the glottis. In the progress of my inquiries concerning the nature of this influence upon the respiratory nerves in contiguity with these glands, I found myself materially obstructed by the vague and unsatisfactory manner in which the very interesting subject of the pathology of nerves had been treated, both in the systematic works and the detached communications of writers upon the subject, which fell within my reach. The language employed was often obscure; many of the general statements appeared to be merely conjectural, and unsupported by evidence; the same symptoms were often referred to different conditions of a nerve, and not unfrequently various and contradictory effects assigned to the same cause.

To clear up some of this obscurity—to reconcile the apparent anomalies, and to disentangle the intricacies which such different and even contradictory statements, not only of various writers, but even of the same author, sometimes in the same chapter of the same work, had produced—I was driven to the necessity of subjecting to a more exact and rigorous examination those recorded cases which are to us what "precedents" are to lawyers, and which alone, when duly examined, can justify the deduction of general principles, and the consequent enunciation of general propositions. I found, indeed, that the morbid appearances had been registered with great minuteness and fidelity, but no very definite or perspicuous attempt had been made to trace with accuracy the symptoms characteristic of each, although the association of the two in description must ever be the great end and object of pathological anatomy. Without this association, the record of appearances is little worth; it has about the same practical value as the mere *catalogue raisoné* of an anatomical museum.

All nosological arrangements are founded upon the resemblances and differences of the essential circumstances of diseases; upon similarity — the foundation of their being grouped together in classes and orders; upon dissimilarity—the foundation of their distinction into genera, species, and varieties. In examining these resemblances and differences in individual instances of "affections" of nerves, it appeared that the phenomena, which I was to subject to examination, manifested themselves at their remote extremities, and that like causes, operating upon the trunks of given nerves, occasioned like effects upon all their branches beyond the point where the morbid impression is made. In further tracing these phenomena, it seemed to be established that nerves erred either by excess or defect—that each was characterised by its appropriate signs, and originated from causes exclusively productive of each.

These general facts constitute the foundation of that arrangement of the general principles connected with the pathology of nerves, which, in my former communications to the GAZETTE, upon the subject of the laryngismus stridulus, I thought myself justified in propounding, and the truth of which further and more extensive inquiries have tended to establish and illustrate.

But to some, these general principles may appear less satisfactory than to myself, and it has been represented to me that they require the confirmation which details alone can afford them. These details, therefore, will form the subject of the following communication, which, from its unavoidable extent, should you deem it worthy of insertion in your pages, will require to be given to your readers "in divided doses," the apportioning of which I must leave to your own discretion and convenience. I do not indeed pretend, or expect, nor shall I attempt to exhaust this interesting and comprehensive subject, to which I am rather desirous to invite the attention of the profession, and to stimulate their curiosity and ardour in the prosecution of further inquiries. It is an extensive field of inquiry, which will amply repay the cultivation.

It may be objected to me, perhaps, that in entering upon this subject I am trespassing upon the manor of others, as these diseases are *local* in their character, produce commonly merely *local* symptoms, and require *local*, and in many instances chirurgical, means for their cure. But these maladies are upon the confines of medicine and of surgery, the boundaries of which it is not so easy, as seems to be assumed by colleges and corporations, accurately to define; and, at all events, I may well shield myself under the example of one of our most eminent and accurate patho-

logists (Dr. Abercrombie), who, himself a practical physician, has very briefly considered the subject of the pathology of nerves, at the conclusion of his valuable "Researches" upon the Diseases of the Brain and Spinal Marrow. But, in truth, these structural maladies are not sufficiently numerous to enable any single individual, to whatsoever artificial distinction in the profession he may be attached, or to whatsoever branch of the profession he may particularly devote himself, to do justice to a subject so ample, without availing himself of the experience and observations of others; and as the stores of medical literature are open to all, it is only requisite, that he who undertakes to investigate or newly arrange the morbid affections of the nerves of the human body, should be tolerably acquainted with their structure, course, distribution, and offices, and with the phenomena of disease in general; that he should have access to the ordinary sources of information, with industry to consult them; and that his habits and pursuits should have accustomed him to the selection, arrangement, and compression of the observations of others, and to the exercise of his reasoning faculty upon the materials which he may thus be enabled to collect. How far it may have been my lot to acquire these moral requisites, or to apply them to the subject under consideration, it is not for me to determine. My purpose has been to simplify the arrangement and facilitate the acquisition of knowledge, with regard to the diseases of these all-pervading instruments of sense and motion, rather than to add largely to the stock of information upon the subject; and if I shall have succeeded in the attainment of these objects of no inordinate pretensions, or of even promoting discussion upon the subject, I shall consider the time and labour which the inquiry has cost me amply repaid.

The general principles to which I here advert are the following:—1st, That if injury or disease affect the trunk of a given nerve, the principal effects will be observed at the remote extremity of its filaments; 2dly, that all the branches proceeding from such common trunk will have a similar disturbance of function from the same morbid impression; 3dly, that the morbid affections of nerves resolve themselves into those of excitement, and those of defective energy, each presenting peculiar and definite symptoms; 4thly, that excitement may be the result of mechanical impulse, of vascular congestion and irritation, of inflammation, of structural disease, and perhaps sometimes of simple functional disorder; and 5thly, that diminished energy is generally the consequence of some extraneous pressure upon a healthy nerve, or of atrophy, either primitive or secondary, of the nerve itself.

These principles, almost elementary in character, are founded upon an extensive induction of facts; and abundant evidence of their truth might be adduced, if I were disposed to confine myself within such narrow limits, from a single collection of medical and surgical cases, the record of the transactions of a society which contains amongst its associates many of the most enlightened members of our profession. But it is unnecessary thus to restrict myself; and cautious only of the authority upon which I select my illustrations, I shall proceed to a detailed consideration of each of these general propositions.

1. *If injury or disease affect the trunk of a given nerve, the principal effects will be observed at the remote extremities of its filaments.*

This statement involves two propositions: the one of a negative character, rather implied than expressed; the other a positive allegation; and both requiring the evidence of facts in their support.

First, it conveys by implication that injurious impressions upon nerves do not produce their effects at the point where the injury is inflicted, nor at any point nearer to the sensorium commune; in the compressed language of a recent eloquent writer upon tic douloureux, "the seat of pain is not the seat of the disease*." This observation, however, applies only to the trunk of a nerve; but it is true in whatsoever part of its course the injury may be received, or the disease exist. If the impression be made at the remote extremity of the nerve, the effect is at first confined to the part injured, as where neuralgic suffering has resulted from pricking, pinching, lacerating, or cutting any part of the

* Sir Henry Halford.

common integuments. This is well-illustrated by Mr. Wardrop's case of injury to the sentient extremity of the fore-finger, which was pricked with a gooseberry thorn*. For above ten months after the infliction of the injury, the pain was confined to the two first phalanges of the wounded finger, after which, however, a new series of symptoms made their appearance. The observation also applies only to healthy nerves, for it is well known that disease of their texture will essentially modify the results.

Experiments upon animals, when instituted upon those fibrils of a nerve which minister only to sensation, give us little information upon this point, as "these creatures are unable to express what they feel, and their expressions of pain may be rather from cutting surrounding sentient parts than from the injury of the nerve; and at all events they will probably confound these sensations.†" But accidents and surgical operations, which are just experiments upon the human frame, the least obnoxious to objection, will enable us to verify the observation. Those who are guilty of the domestic offence of napping in a chair present abundant illustrations. During sleep under such circumstances, it is far from uncommon (and my experiments have been numerous upon the point), for certain nerves to be so compressed as temporarily to annihilate their function. If the occiput rests upon the sharp edge of the back of a chair, the sentient extremities of the sub-occipital branches suffer, and the occiput is benumbed; if the arm hang over the same edge the median or radial nerve is affected, and the finger and thumb which it supplies lose their sensibility: if the part of the arm immediately above the elbow rests upon the back or arm of the chair, or upon a table, the head being supported by the corresponding hand, the ulnar nerve will be influenced, and the half of the ring finger, with the little finger, will lose all power of sensation; whilst from long continued pressure in sittting in one position the sciatic is influenced and the foot paralysed. There is no peculiar sensation, in these cases, at the precise point where the nerve is pressed, nor are we conscious of the result until some little time after waking, when the effects are observable at a distance. Hence it has with much truth been alleged that nerves in their natural and healthful state are in themselves little sensible, and are "probably media of transmission only,*" "les agens de la transmission des impressions†;" and if the part where the impression is made upon the nerve, is little sensible of that impression, *a fortiori*, it may be concluded that the parts supplied by the same nerve above that point, that is nearer to the nervous centre, cannot be cognizant of the injury, or suffer from its immediate effects; "nihil patiuntur artus qui nervos habent supra sedem vinculi vulnerisque natos.‡"

Secondly, it is made a matter of direct and positive statement, that the principal effects of injuries or diseases are observed at the remote extremity of the filaments of the nerves affected, and such is the force of habit and associations in this particular, that even if the parts, which they supply with nervous energy, no longer exist, as in some cases of amputation, uneasy feelings are constantly referred to the lost member. The husband of one of my patients, in a *sortie* for the recovery of a superior officer who had been taken prisoner by the enemy, lost his leg by nearly the last shot which was fired at the conclusion of the Peninsular war. From some mechanical irritation, or more probably from chronic inflammation, or other diseased condition, of the nerves of the stump, he is subject to such agonizing neuralgic affection, with spasm of his remnant of a thigh, as, notwithstanding his natural cheerfulness and courageous bearing, almost to make him faint. He constantly complains of his offending leg and toes which are buried in the South of France. Similar instances are mentioned by Portal, Swan, Descot, and others §, and they afford very une-

* Med. Chir. Trans. vol. viii.
† Sir Charles Bell.

* Mayo. † Magendie.
‡ Haller, Elem. Phys. v. 4, p. 325. Galen has also well expressed the same principle founded upon similar facts: "adeo certe magna quædam vis est in nervis, superne a magno principio affluens: non enim ex seipsis eam, neque connatam, habent. Cognoscere etiam potes hinc maxime, si incideris quemcunque istorum nervorum, aut spinalem ipsam medullam: quantum enim superius est incisione, continuum cerebro, id quidem adhuc conservabit principii vires: omne autem quod inferius est neque sensum neque motum ulli præbere poterit. Nervi itaque rivorum in morem à cerebro, ceu ex quodam fonte deducunt musculis vires."—*De Motu Musculorum*, lib 1.
§ Frequentissima et antiquissima est adnotatio, si quando digitus aut per, aut crus amputatum

quivocal, though indirect evidence, of the principle under notice—that when a strong impression is made upon a nerve in its course, the effects are commonly observed at its remote extremity: "if, however, a doubt should be entertained upon this subject, an attention to symptoms will soon dispel it; when a nerve is irritated at any part between its origin and termination, a sensation is felt as if some injury were done to the part which it supplies. If, therefore, the cutaneous nerves were injured, the integuments of the fore-arm would seem to suffer pain; but if the median nerve was wounded, the thumb and two next fingers would be affected with pain *."

It may perhaps be somewhat difficult to reconcile this with a speculative opinion of Sir Charles Bell upon this subject, that "a pure and simple nerve has the influence propagated along it in one direction only, and not backwards and forwards: it has no reflected operation or power retrograde; it does not both act to and from the sensorium †." There is no doubt that the ordinary course of sensation, from the impression on the part to the conception in the sensorium, is in a direction from the extremity of the nerve to the brain; but here an impression is made upon a nerve, and sensation is experienced at a point still more distant from the brain than the seat of impression. How are these apparently conflicting sentiments to be reconciled? Three modes of explanation suggest themselves to my mind: first, the observation which I have quoted may refer only to muscular parts, to which Sir Charles Bell has particularly, if not exclusively, applied his principle of the nervous circle; secondly, there may be actually no exertion of nervous energy beyond the part of the nerve upon which the injury is inflicted, although the limb and the nerve remain entire: the sensation of pain at the extremity may be a delusion, the result of those powerful principles in the physical and moral constitution of man, habit and association, which we have seen in stumps, leading the patient to refer his sensations to the extremity which he has lost, even to the belief in the perception of flexion in the amputated member: thirdly, disease may alter the results; and in most of the cases of painful affections it must be borne in mind that there is some structural disease of the nerve in its course. But I am free to confess that these suppositions do not altogether remove the difficulty from my mind. Still, conceding all that may be deduced from this apparent anomaly, it remains substantially and perhaps universally true, that "if we select a filament of a nerve, and if its office be to convey sensation, that power shall belong to it in all its course wheresoever it can be traced, and wherever in the course of that filament, whether it be in the foot, leg, thigh, spine, or brain, it may be bruised, or pricked, or injured in any way, sensation and not motion will be the result; and the perception arising from the impression will be referred to that part of the skin where the remote extremity of the filament is distributed *."

This general principle, then, as far as sensitive nerves are concerned, is abundantly established; but it is equally true of motor nerves. "Irritato nervo convulso in musculo oritur qui ab eo nervo ramos habet †." "A rabbit was struck behind the ear, so as to deprive it of sensibility; and I then exposed the spinal marrow. On irritating the posterior roots of the nerve, I could perceive no motion consequent in any part of the muscular frame; but on irritating the anterior roots of the nerve, at each touch of the forceps there was a corresponding motion of the muscles to which the nerve was distributed. Every touch of the probe or needle on the threads of this root was attended with a muscular motion, as distinct as the motion produced by touching the keys of a harpsichord ‡." "The nerve of the fifth pair being irritated at its root in an ass, the moment it is killed, the muscles of the jaw act, and the jaw closes with a snap §." The same nerve being irritated where it lies in the sphœno-palatine fissure, "the jaws came together with much force; indeed, so as to nip an assistant's finger

pierit; in eo tamen amputato artu dolores vividos omnino percipi, ut sana, sibique constans, anima fallatur, atque in eo artu dolorem se percipere suadeatur: qui dudum detruncatus conputruit neque nunc ulla pais est nostri. Ipsam flexionem detruncati artus se percipere credebat qui truncum brachium flectebat cujus manus perierat.
Haller, Elem. Phys. v. 4, p. 305.

* Abernethy on the ill consequences of venesection: Surgical Works, v. 2, p. 159.
† Sir C. Bell on the Nervous System, p. 232.

* Bell, op. cit. p. 18.
† Haller, Elem. Phys. iv. p. 325.
‡ Bell, p. 31.
§ Ibid. p. 35.

severely*." Again, "on dividing the roots of the nerve in a living animal, the jaw fell relaxed†." These are happy illustrations of the function of the motor branch of the fifth pair of nerves, and afford conclusive evidence that the effects of injurious agents upon nerves are observable at the remote extremity of their fibres.

[To be continued.]

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

Elements of Chemistry, including the Recent Discoveries and Doctrines of the Science. By EDWARD TURNER, M.D. F.R.S.L. & E., &c. Fifth Edition, enlarged and carefully revised.

THE high character which this work has hitherto maintained—being in fact, as a northern critic has entitled it, "the best elements of chemistry extant"—rendered us rather anxious, on the publication of this, the fifth edition, to ascertain how far it had really been made conformable with its title-page profession of including the recent discoveries and doctrines of the science. We have noted down a few of the results of our examination.

In the section on Heat, Dr. Turner assumes it as an established fact, that all gases undergo equal expansions by equal additions of heat; and that, knowing the law of expansion of any one gas, we may know all. He then quotes Gay Lussac for the quantity of the expansion of air, and seems quite satisfied with the calculations of that chemist. Now the doctrine here laid down, though generally admitted by chemists, would appear from certain recent researches not to be very tenable. The improbability of it, indeed, cannot but have often occurred to the chemical philosopher: he cannot but have been struck with the unlikelihood of cyanogen and hydrogen, for example, expanding in an equal ratio, when the former is so readily condensed into a liquid, the latter remaining refractory; might he not hence readily infer, that the particles of cyanogen are less influenced by heat than hydrogen; or that, at least, the two gases cannot be equably expandible by heat? But how happens it that Dr. Prout's recent experiments and doctrines on the subject have been left wholly unnoticed by Dr. Turner? In the important paper of which an abstract is given in the first volume of the Transactions of the British Association, Dr. Prout has shewn that

	Grains.
100 cub. inch. Air 60° Fah. weigh	31·0117
Ditto 32° Fah.	32·7900

These results vary considerably from those of Gay Lussac. According to the law laid down by the French philosopher, if 100 cubic inches of air at 60° weigh 31·0117 grs., the weight of the same volume of air at 32° will be 32·8206 grs., which exceeds Dr. Prout's experimental result by ·0306 grains —a material difference, when it is recollected that the weight at 32° forms the chief element in the calculation of all the other quantities of expansion. Hence the fraction $\frac{1}{480}$ cannot be safely assumed as the measure of the expansion for each degree of Fahrenheit; nor should the formulæ and deductions in Dr. Turner's note (p. 35) be presented to the student, without inculcating some little caution. Yet we find not one hint to that effect. The theory of the construction of the thermometer, too, in the following page, involves at least a questionable principle. We can only infer from all this, that Dr. Prout's paper is unknown to the author of the Elements, which surely ought not to be the case when professing to give "the recent discoveries and doctrines of the science."

Another instance in which we fail to find due attention paid to "recent doctrines" occurs in the section on Light. The undulatory theory is summarily disposed of: Dr. T. mentions Herschell and Airy as its chief supporters in later times, and to *their* works he refers those who wish to study the subject. We cannot conceive with what good reason he does this. Have not Fresnel and Young done more for the theory than either Herschell or Airy, who have in fact, for the most part, only followed out the views of the former? And why refer the student to the elaborate mathematical (and to most medical students unintelligible) articles of Sir J. Herschell, in the Encyclopædia Metropolitana, or

* Ibid. p. 63; note by Mr. Shaw.
† Ibid. p. 35.

Professor Airy in his mathematical tracts, when there is so beautiful and simple a memoir on the subject by Fresnel, *translated by Dr. Young*, in the Journal of Science for 1827? and when so much more familiar sources of information are open in Peclet's *Traité de Physique*, and Pouillet's *Elemens?*

But Dr. T. is not quite correct in saying that *either* theory will serve the purpose of classifying facts and explaining most of the phenomena of light. Has he forgotten one very important instance to the contrary? Does the Newtonian theory explain how two rays of light, meeting under certain circumstances, produce darkness? The phenomena of diffraction, in fact, completely nonpluses the Newtonian doctrine; and Professor Airy himself has shown the hollowness of Newton's theory of the colours of thin plates. And the reason of our author for going into particular detail of the old theory, is surely not very solid. He admits that the strongest evidence is in favour of the undulatory theory—but he pursues the old track, *because* "the views of Newton are still generally used and understood!" Who would not have thought that this was the very reason why the undulatory theory should be adopted in preference, or at least in some measure explained? But Dr. Turner has not done either.

In the very short and inadequate notice bestowed on double refraction, there is not a little to be censured. When a ray of light passes through Iceland spar, we learn from Dr. T. that it is divided into two portions—one obeying the *ordinary* laws of refraction, whereas the other constitutes an *extraordinarily* refracted ray. Now any person unacquainted with the subject would fancy from this, that *in all cases* one of the rays is ordinarily refracted. Yet such is not the fact: for in all crystals having two axes of double refraction, neither ray is ordinarily refracted.

The examples of polarization given by Dr. T. are miserably scanty, being confined merely to reflection from the surface of glass or water. And the subject is dispatched *in toto* by the following brief announcement. "The phenomena of double refraction and polarized light constitute a department of optics of great and increasing interest; but it is *too remote* from the pursuits of a chemical student to be treated of at length in this work. Those interested in such studies will find an excellent guide in Sir D. Brewster's Treatise on Optics in the Cabinet Cyclopædia."

With respect to the advantage arising to the student from the consideration of this subject, we do not agree at all with Dr. T. It is by no means remote from his pursuits. He cannot understand the structure of crystalline and other bodies, nor the changes that take place in certain crystals by the action of heat, without being familiar with the phenomena of double refraction and polarization; at all events they deserve, we should think, at least *as much* notice in this work as the "generally used and understood" principles of reflection and refraction, which occupy from page 86 to 99.

In pointing out what he considers as the chief points connected with the decomposition of light by the prism, we perceive that the author wholly omits to notice Fraunhofer's lines in the spectrum. And in shewing the chemical agency of light, we observe that the author is equally negligent, in never once alluding to the beautiful experiments of Fresnel (Jour. of Science, Jan. 1829.) Rumford's photometer, we also observe, is mentioned with some commendation: this ought not to be, for it is an instrument liable to great fallacy, as Herschell has proved.

On the whole, the article *Light* by Dr. T., is, whether considered chemically or physically, a meagre one; and the author, we think, would have better consulted the interests of students, had he given them, on the subject of the chemical relations of light, an abstract from *Gmelin's* excellent *Handbuch*.

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But perhaps the most remarkable omission in a work like this, professing to be *au courant* in chemical science, is that there is no account given in it of Raspail's views in the department of organic chemistry. This we consider a capital omission. One should have thought that no book of elements could appear, touching however slightly on the subject, without more or less embodying the striking and valuable results of Raspail's researches. Not even when treating of albumen does Dr. T. once allude to Raspail's account of soluble and insoluble albumen in white of egg; nor of the opinion given by the same distinguished analyst of the relations which subsist between fibrine and albumen.

Such are a few of the points which struck us in the course of our examination of Dr. Turner's new edition. The book, as a whole, we admire much, and we recommend it as the best that the student can purchase; but thinking, as we do, that some of the omissions we have pointed out are not unimportant, we cannot but suggest that it is in the author's power to render the *sixth* edition still more valuable than the present one.

MINUTE ANATOMY OF THE LIVER;

Being a Concise and Popular View of Mr. Kiernan's *Researches.*

We have already laid before our readers Mr. Kiernan's elaborate and valuable paper, but we have received from so many correspondents applications for explanations of particular points, that we are quite satisfied some difficulty is found in fully understanding the author's views. We have endeavoured to give the chief points in a detached form, in such manner as we hope will render the importance of Mr. Kiernan's investigations more generally appreciated, still, however, referring to the paper itself, as contained at pages 324, &c. of the present volume, for more complete and satisfactory details. We may add, that the present abstract has been seen by Mr. Kiernan, who has permitted us to express his approval of its accuracy.

Surfaces of the Liver.—The liver has three surfaces—viz. 1st. the *external*, commonly so called; 2dly, the canals or perforations which contain the larger branches of the portal vein, hepatic artery, and hepatic duct, and called the *portal surface;* 3dly, the canals which contain the hepatic veins—the *hepatic-venous surface.*

Substance of the Liver.—This is made up of lobules, vessels, nerve, and cellular tissue prolonged from the capsule of Glisson.

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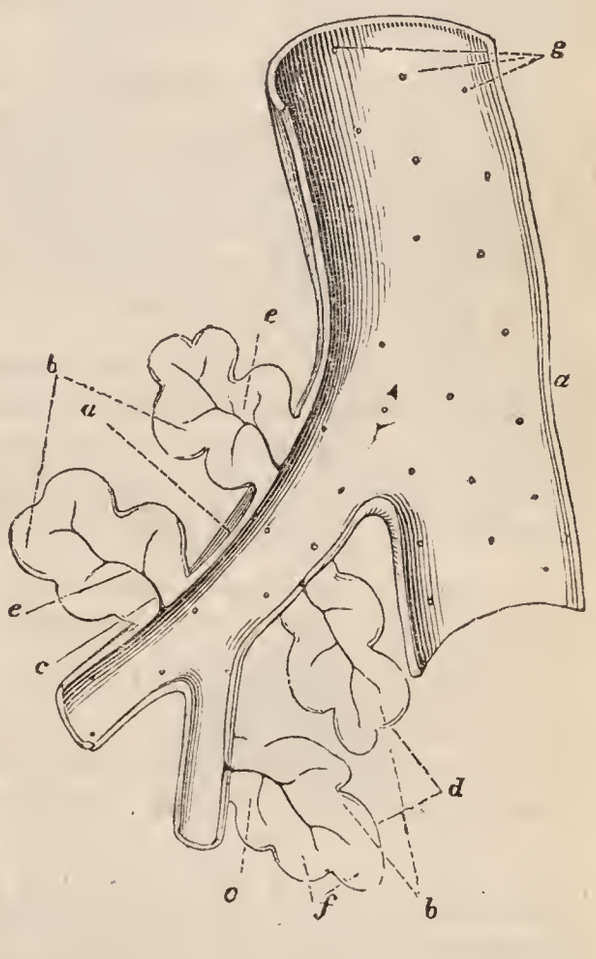
Fig. 1.



hepatic vein (*a a*) with lobules also divided longitudinally, and having a foliated appearance (*b b*).

The lobules are packed close together, but being of various shapes, and gene-

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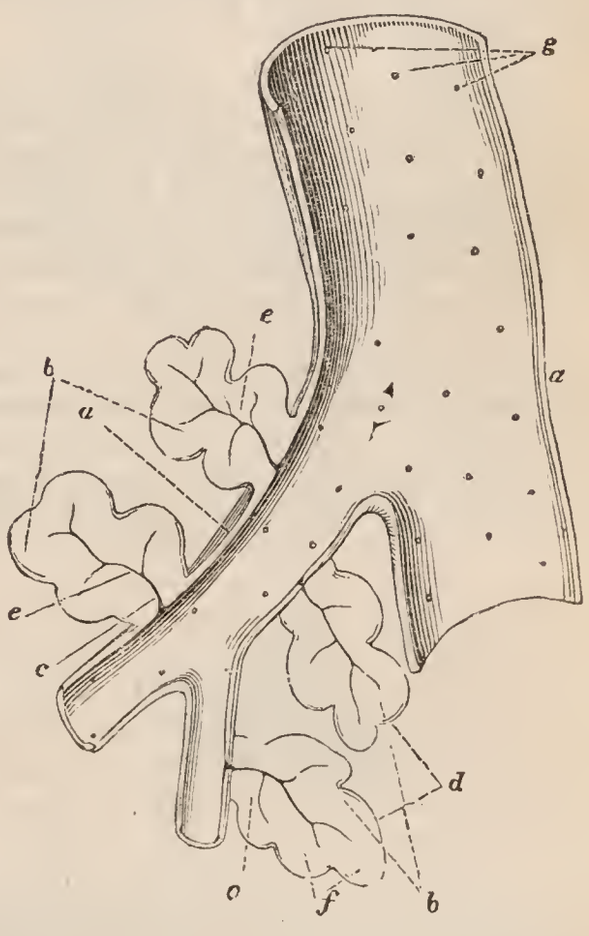
Lobules of the Liver.—These are small bodies, based on certain branches of the hepatic vein, and bounded by a fine cellular expansion and plexus of vessels. The subdivisions of the hepatic vein are likened to the branches of a tree, and the lobules to leaves without foot stalks resting upon them, as in Fig. 1, which represents a magnified longitudinal section of a small

Fig. 1.

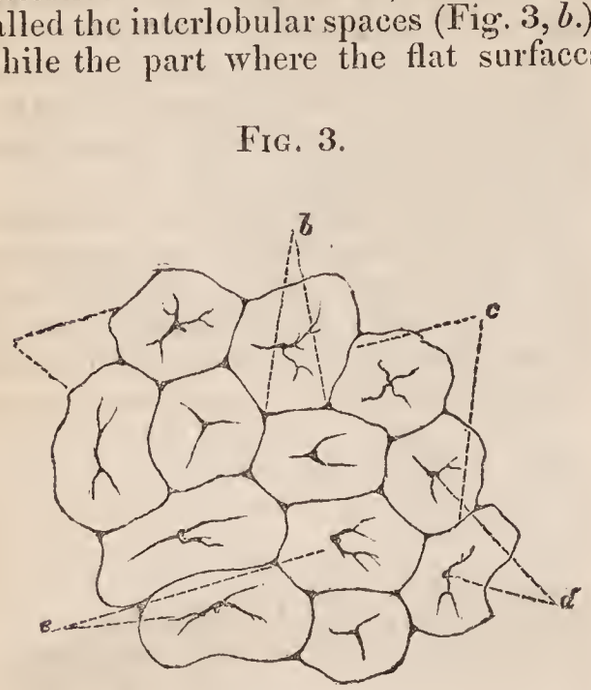


hepatic vein (*a a*) with lobules also divided longitudinally, and having a foliated appearance (*b b*).

The lobules are packed close together, but being of various shapes, and gene-

rally more or less rounded, they leave interstices between them, which are called the interlobular spaces (Fig. 3, *b*.), while the part where the flat surfaces

Fig. 3.



appear to touch, are called the interlobular fissures (Fig. 3, *c*.) The lobules constitute the secreting portion of the viscus; each has its own system of vessels, and may be regarded as an independent gland.

Vessels of the Liver.—These are the hepatic vein, the hepatic artery, and vena portæ; to which may be added the hepatic duct.

Hepatic Vein.—The larger branches of this within the liver are called *hepatic-venous trunks;* the smaller branches on which the bases of the lobules rest are called *sub*lobular veins: each lobule, where it rests on the sublobular vein, is perforated by a minute ramule; and this little vessel, which occupies the centre of the lobule, is called the *intra*lobular vein (See Fig. 1, *e e*.) When the lobule is cut across, this vein is seen to ramify from the centre towards the circumference (See Fig. 2, *b*, *c*.) The

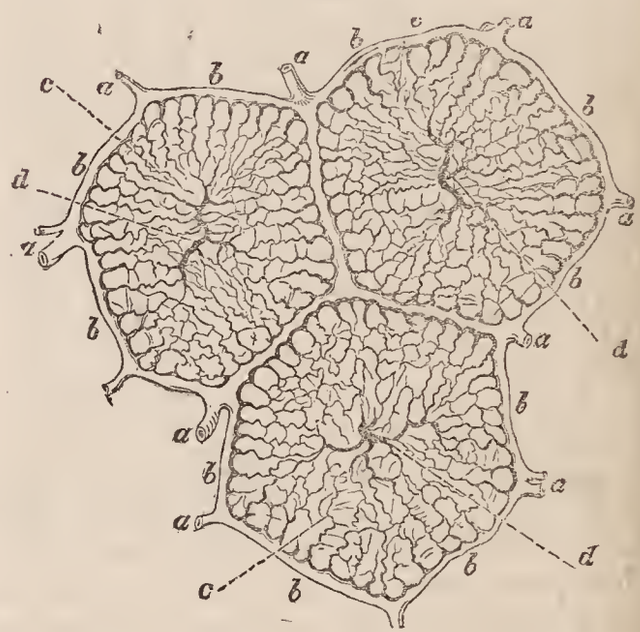
Fig. 2.

intralobular vein of one lobule has no communication with that of another, but returns its blood exclusively into the sublobular vein.

Hepatic Artery.—This artery, which follows the ramifications of the portal vein and hepatic duct, is distributed exclusively on the vessels and other textures of the liver, for their nourishment. Its blood is then collected by minute veins, and carried into ramifications of the portal veins, where, being now venous blood, its farther course becomes the same as that of the vena portæ.

Portal Vein.—The ultimate destination of this is the spaces and fissures between the lobules, whence it is distributed to each particular lobule ramifying from the circumference towards the centre. The branches of the vena portæ running between the lobules are called the *inter*lobular veins (Fig. 7, *b b b*.) The minuter ramifications within the lobule are called lobular venous plexuses (Fig. 7, *c c c*), and these last inosculate towards the centre with the *intra*lobular

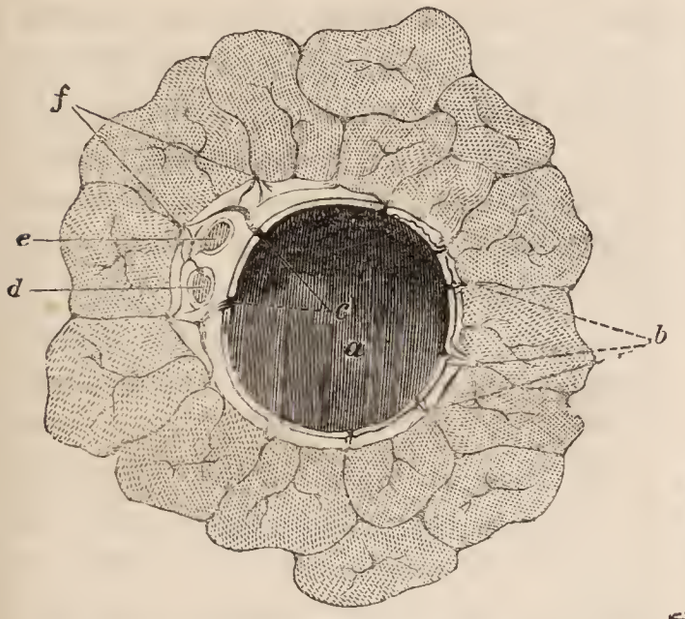
Fig. 7.



ramules of the hepatic vein (Fig. 7, *d d*.) The *inter*lobular veins of one lobule communicate freely with those of the adjoining lobules (Fig. 7, *a a*: three lobules are here represented.) The larger branches of the portal vein are not in contact with the interlobular spaces on the surface of the portal canals, but are surrounded by a capsular investment, in common with the hepatic artery and duct. In such situations the three vessels just named send forth branches, which form plexuses in the sheath surrounding them; and these are called the *vaginal* branches and plexuses. They in turn give origin to *inter*lobular branches. The smaller portal branches, called *sub*lobular veins, are in contact with the interlobular spaces, except where the duct and artery (which always accompany them), interpose.

From that part of the circumference of each vein which is in direct contact with the interlobular spaces, interlobular veins

Fig. 4.



are given off *directly*, but at the other part vaginal branches first arise.—See Fig. 4, which represents a transverse section of such a portal canal, containing the vein (*a*), the duct (*d*), and the artery (*e*). On one side the interlobular branches are seen arising from the vein directly (*b*), while on the other side vaginal branches are seen to arise (*c*), and afterwards to subdivide.

Hepatic Duct.—The lobular plexuses of the portal vein (see Fig. 7) are accompanied by ducts, to carry away the bile as it is secreted. These are seen with a microscope as minute yellow points when a lobule is cut across, and constitute the acini of Malpighi.

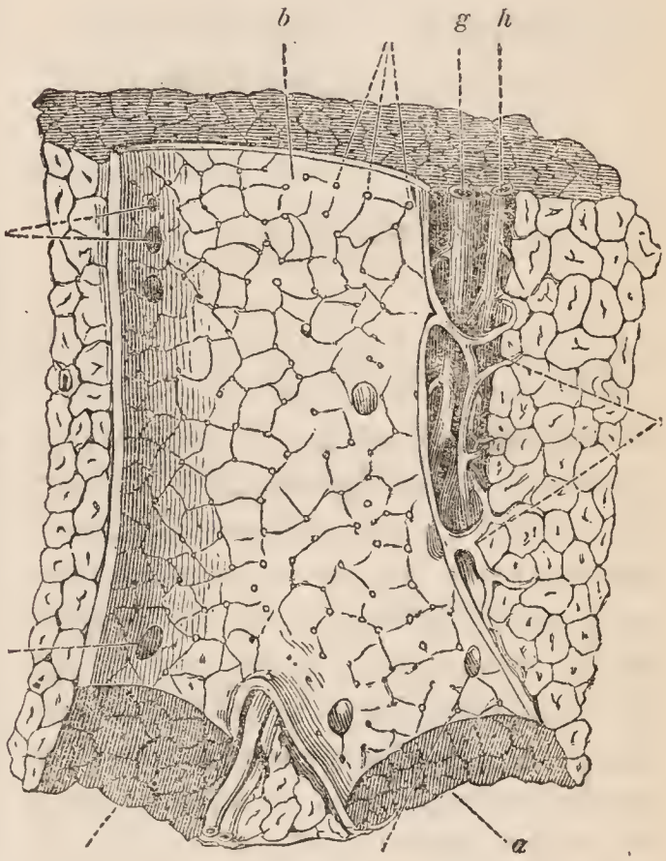
Fig. 6.

—Fig. 6, *b b*, interlobular ducts; *d*, lobular biliary plexuses; *e*, *intra*lobular or hepatic vein.

Capsule of Glisson.—This is a cellulo-vascular membrane, in which the vaginal, interlobular, and lobular branches of the portal vein, hepatic duct, and hepatic artery, divide and subdivide: it lines the portal canals, enters the interlobular fissures, and forms the capsules of the lobules; nay, it enters the lobules with the blood-vessels: and these several parts of the capsule are called *vaginal*, *interlobular*, and *lobular* portions respectively.

The portal canals, then, are occupied by the portal vein, hepatic artery, biliary duct, absorbents, nerves, and the capsule of Glisson. A general idea of the arrangement may be gathered from the adjoining cut, which represents a longi-

Fig. 5.



tudinal section of a small portal vein:—*b*, the vein, which occupies by much the largest space; *g*, the duct; *h*, the artery—all of which are seen giving off vaginal branches; the fine tissue of the capsule investing the whole.

Sometimes one set of the vessels above described is in a state of congestion; sometimes another. When the *intra*lobular veins are congested, the centre of each lobule appears of a more or less dark red, while the circumference is of a yellow colour: when the *inter*lobular veins are congested, the circumference is dark and the centre lighter. The former is called *hepatic* venous congestion, the latter *portal* venous congestion. Both may exist together, and then the liver shews an uniformly dark colour. In *hepatic* venous congestion, which is by much the most common, the dark portions are detached; but in *portal*

congestion they may be continuous. Considerable modifications take place in the aspect of the mottled appearance, according as one or other of these forms of congestion preponderates, and according as it is general or partial; but no such thing exists as the medullary, cortical, red, yellow, or other analogous substances, described by previous anatomists (by all of them, indeed, except Professor Müller, of Berlin), and on the supposed existence of which Andral has based his morbid anatomy of the liver.

MEDICAL GAZETTE.

Saturday, January 3, 1835.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

FACTS AND INFERENCES FROM THE POPULATION RETURNS.

IN the number of the *Annales d'Hygiène* recently published, there is an article which we have perused with much pleasure: we allude to an analytical essay by M. Villermé *, on the population of this country, as reported in the parliamentary returns of the late census. We have noticed those returns ourselves some time back, and on various occasions have had to refer to them as documents of much importance in enabling us to draw certain inferences relative to matters connected with medical statistics. But this did not render us the less anxious to have the opinions of so very distinguished a statistical writer as M. Villermé, on the voluminous materials presented to him in our population papers. It is only they who have looked through the documents in question who can appreciate the intrepidity of a foreigner wading through three ample folio volumes of English parliamentary manufacture; and only they who are familiar with statistical research who can properly estimate the critical sagacity and expertness with which M. Villermé contrives to separate the wheat from the chaff, and to serve up to his countrymen all the best things that are to be selected from the crude mass which he had to deal with. We shall point out a few of the facts and deductions which the author puts most prominently forward, following as nearly as possible the arrangement of the subject which he has himself adopted.

The general results of the census are first stated, comprising the number of families and inhabited houses in Great Britain, the several portions of the population engaged in agricultural, manufacturing, and professional pursuits, and the relative numerical force of the sexes (38 females to 37 males); but M. Villermé regrets that the distribution of the population according to the respective *ages*, has not been given in the late returns.

The author then proceeds to notice the facts connected with the *movement* of the population, gathering from Mr. Rickman's preface the chief points relative to our registers of marriages, births, and deaths. With regard to the first, he says that probably the *marriage* registers are more regularly kept than any other in the kingdom; for, with the exception of Quakers and Jews, who follow their own peculiar rites, and certain other parties who enter into the matrimonial state in the neighbourhood of, or beyond the Scottish border, all the rest seem to be duly enrolled. Mr. Rickman thinks there are not more than about 320 marriages contracted annually throughout the country, not entered in the church books. The proportion of marriages for the last decennial period was about 1 in every 128 of the population. In Middlesex it was highest, 1 in 103; in Hertfordshire lowest, 1 in 175.

* Sur la Population de la Grande-Bretagne, considérée principalement et comparativement dans les districts agricoles, dans les districts manufacturiers, et dans les grandes villes. Par L. R. Villermé.

But it is in registering the births, or rather the baptisms, which take place yearly, that our archives are most defective. Mr. Rickman computes the deficiency to be not less than 17,124 annually for England and Wales—a computation founded on very uncertain data, and probably not much to be depended on. The causes of this great lacuna in the registers are well-known; we need not repeat them after M. Villermé; but the fact that, of our unregistered infants, a larger proportion are males than females (in the ratio of about 24 to 23), is too remarkable not to obtain at least a passing notice.

For the first time, a return was made, in the last census, of the number of *illegitimate births* occurring in Great Britain. There were 20,039 of them in the year 1830, in the proportion of about 41 males to 40 females; and as compared with *legitimate* births, they are reckoned at 1 in 18 for the whole of England and Wales. A curious circumstance, with regard to this subject, must not be overlooked—namely, that the ratio of illegitimate births is at its minimum in Middlesex, being 1 in 38, while in Wales it is at its maximum—1 in 12. "This fact," says M. Villermé, "is the more singular, inasmuch as in other parts of Europe it is in the large and densely peopled manufacturing and commercial towns that the greatest number of bastard births are found. Something probably may be owing to the deficiency of Foundling Hospitals in Great Britain—establishments which rather tend to encourage bastardy: but it should be observed, with reference to the Middlesex return, that it includes London, which, owing to the general opulence and density of its population, affords peculiar facility for concealing the births of children. It is certain that the lists of bastard births are very negligently kept in the metropolis; a circumstance not surprising, when such serious irregularity prevails in the registration of the legitimate offspring also."

Regarding the *mortality* returns, it is computed by Mr. Rickman that the omissions in the burial registers amount annually, on an average of ten years, to 9387. M. Villermé enters into a close scrutiny of the statements put forth on this head by the *rédacteurs* of our national returns; but as there is nothing new in the arguments on either side, and sufficient perhaps has been already said on the subject in this journal, on former occasions, we may proceed to notice some of the author's remarks on the mortality of Great Britain, with regard to sex and age.

The table drawn up with this view, in the present returns, is decidedly the most comprehensive ever formed. It is founded on 3,938,496 actual deaths (1,996,195 of males, 1,942,301 of females) registered during eighteen successive years, from 1813 to 1830; and our author renders the results doubly interesting by comparing them with those supplied by M. Quetelet, in a valuable document lately presented to the Parisian Academy of Sciences, but as yet, we believe, unpublished. The following is the abstract given by M. Villermé, in which we see at a glance the number of deaths, in the 1000, at the ages mentioned in the first column.

Age.	Male.	Female.	Both Sexes.	In Belgium
1	219	176	195	225
2	289	241	265	295
5	369	321	345	376
10	412	362	388	417
15	439	389	414	440
20	470	426	448	465
30	543	509	526	532
40	645	582	594	591
50	670	649	660	652
60	741	717	730	728
70	833	810	821	830
80	934	918	926	941
90	992	988	990	993
100	999·7	999·4	999·5	1000

One curious fact immediately suggests itself on inspecting this table—namely, the superior *vivacity* of females, as compared with males. At every epoch of life it would seem that of an equal number of either sex, born at the same time, there are fewer deaths of females to be reckoned than of males.

And comparing the law of mortality, as expressed in this table, with that calculated by M. Duvillard for France, the following are the inferences deduced by the author:—

"At the end of the first year, the mortality in England is scarcely a fifth; in France it is nearly a fourth. At five years, a third is dead in England, two-fifths in France. At twenty, the respective proportions are 9-20ths and ½. At sixty, nearly three-fourths have died in England, four-fifths very nearly in France. And, lastly, at the age of 90, there should be ten survivors out of the 1000 in England, while but four in France."

M. Villermé further observes, with reference to the copious English tables which he had before him, that it appears from them, that as the age of the individual advances from birth, the chances of death in the course of the year diminish constantly up to 15, while after that age they go on increasing up to a late period of life. The same results are deducible from the Belgian tables, while those of France, according to Duvillard's calculation, give 11, or rather perhaps 4, as the epoch of the greatest tenacity of life.

The classification of mortality, according to the respective ages, helps us to yet another important inference—namely, that in this country the mean *probable life*, at the moment of birth, is 26 years (not 25, as Mr. Rickman states it.) In other words, an even wager might be laid, that a child just born, not taking the sex into account, would reach its 26th year; for at that age the number born at the same time is exactly reduced to one-half. If the infant be a male, the probable life is less—only 23 years; if a female, it is more—28.

We shall stop here for the present, reserving for another opportunity the observations of M. Villermé on the respective mortality of our agricultural and manufacturing districts.

COLLEGE OF PHYSICIANS.

We need scarcely say, that the statement put forth last week by one of our contemporaries, regarding certain proceedings in the College of Physicians, is fictitious. The fact is simply, that the government has it in contemplation to relieve Dissenters from their civil disabilities, more particularly as regards law and physic: with respect to the latter, it is proposed that the College of Physicians should confer the requisite degree without the parties having to leave England for the purpose of graduating. But the obtaining of this privilege would require to be accompanied by some considerable changes in the constitution of the College. A committee has been appointed, for the purpose of considering what these ought to be: no easy task, if we may judge either from the difficulties which present themselves to our own minds, or from the result of former deliberations in the College upon this subject. We shall probably recur to the subject; meantime we would venture to say to the Committee (and certainly in no factious or unfriendly spirit), "either do nothing, or leave nothing for others to do."

THE LANCET'S *FIRST* LIE FOR 1835.

An article in the Lancet *of this day* (January 3d, 1835), done we presume to order, as a puff of the London *University* Hospital, contains the following passage:—"At the *Middlesex*, *St. George's*, and other metropolitan institutions, the pupils have long been denied the opportunity of visiting patients unless in the presence of one of the medical officers." We beg to state, for the benefit of those whom it may concern, that the above assertion is a gross falsehood. In this respect it is in keeping with most of the statements regarding the London hospitals which emanate from the same respectable quarter, and we only give it as the *first* offering of the year from our contemporary to the gullibility of his readers.

CHEMICAL EVIDENCE

IN A CASE OF ALLEGED POISONING AND CHILD-MURDER.

LETTER FROM DR. TURNER.

To the Editor of the Medical Gazette.

Sir,

My attention has been directed to an article on a case of supposed child-murder, in the last number of the Medical Gazette, where my evidence is given in the form of a quotation, I presume, from some newspaper. The quotation represents me as saying something very like nonsense, which nonsense your commentator charitably supposes to be a correct representation of my meaning, and then honours with a criticism. I beg to state, as a correction of the absurdity imputed to me, that the quotation is correct neither as to my words nor my meaning. What I intended to express was, that no satisfactory evidence had been obtained of the presence of any poison; but that the fact of such not being discovered was not a conclusive proof that death had not been produced by poison. The remark was applied to opium and prussic acid; and my reasons for making it were of a chemical nature. The tests for the common mineral poisons are so precise and delicate, that such poisons rarely cause death without some trace of them being, in some form or other, discoverable in the stomach; and therefore their absence, when properly searched for, is so far a presumption that death was not caused by them. But the case is different with substances of difficult detection, or of a perishable nature, especially when, as in the present instance, a considerable interval has elapsed between the periods of death and the chemical examination. The quantity of opium capable of destroying an infant, supposing the opium to have remained unabsorbed in the stomach, might well elude detection when mixed with a coloured putrid mass, seeing that the separation of morphia from mixed fluids, when in minute quantity, is a point of much difficulty. Prussic acid was also referred to, because its volatility and ready decomposition rendered its detection so long after death hopeless, even though it had been administered in a large dose.

Your commentator seems to make it matter of complaint against me, that I did not make the examination myself, and that I gave written instead of oral testimony. In regard to the latter charge, I would have attended the coroner and given oral testimony at length, if the coroner had asked me to do so. As to the former, I did more than I had undertaken. When asked to make the examination, I replied that my occupations did not permit me to conduct the inquiry personally, and that the most I could undertake was to have the experiments made under my direction by a careful assistant. But on finding that no evidence could be obtained of the presence of mineral poisons, I made a careful examination for those of the vegetable kingdom, especially for opium.

Your commentator appears also to throw blame on Mr. Shaw, for not himself testing for poison. Mr. Shaw, however, did no more than what is habitually done by the leading men in the profession—namely, endeavour to transfer to some friend specially engaged in chemical pursuits any chemical investigation which devolves upon them; nor is it surprising that they should do so. Your commentator, if a practical chemist, will know that testing for poison is one of the most delicate operations in chemistry; and if he is not a chemist, then would he have acted on the same principle as Mr. Shaw, or, by trusting to himself, have run a great risk of conducting the inquiry in an unsatisfactory manner.—I am, sir,

Your obedient servant,

Edward Turner.

University of London,
Dec. 22, 1834.

[Dr. Turner "presumes" that we quoted him "from some newspaper." We *said we did*, in the article to which he alludes, and therefore there was no great occasion to "presume" about it. That the quotation was "very like nonsense," we could not help: we took it verbatim from the *Times*, where to this hour, we believe, it remains uncorrected. The *Herald*, and other papers besides, repeated the passage either literally or substantially; so that writing at the time we did, several days after the report of the inquest was before the public, we could have no reason for sup-

posing it inaccurate. Dr. Turner says he did "more than he had undertaken." In our opinion, he had done better had he undertaken *nothing*, when he did not intend to do *all* that was wanted. To Mr. Shaw we attach no "blame," except for having bandied about, apparently on his own sole responsibility, the *pièce de conviction*, the stomach and its contents, which the coroner alone should have permitted the chemists of the London University to meddle with.—Ed. Gaz.]

PATHOLOGICAL LECTURES,

Delivered in King's College, London,

BY

Professor Mayo, F.R.S. &c.
Surgeon to the Middlesex Hospital.

IX.—*Of the Brain and Spinal Cord.*

The textures, of which the morbid alterations are now to be considered, are—1, the cerebral tissue, including both the medullary and cineritious substances of the enkephalon and spinal marrow; 2, the pia mater; 3, the arachnoid; 4, the dura mater. In speaking of the pia mater separately from the brain and spinal marrow, the external layer only of that membrane is referred to. The innumerable productions from it, which, entering the cerebral substance, form sheaths to all the nervous fasciculi, cannot be considered apart from the cerebral substance itself; nor would it even be proper to treat as a separate subject the external layer of the pia mater, but that this portion of the membrane is at particular parts gathered into detached folds, or reduplicatures, which contain in them no cerebral substance, and that elsewhere the free surface of the pia mater constitutes the organ of a special secretion.

I.—*Of the cerebral tissue.*

a. The cerebral tissue from its softness is easily injured; it possesses considerable powers of reparation.

The brain and spinal marrow may be bruised, without fracture of the bony chamber in which they are lodged: concussion alone will produce this effect. The cerebral tissue, if examined after a recent bruise, appears blood-shot, with spots of extravasation, resulting from rupture of the small vessels. Under favourable circumstances, the bruised cerebral substance may recover itself, the blood effused being absorbed. A more severe concussion causes either rupture of the larger vessels, with considerable extravasation of blood, or complete disorganization of the bruised part, which appears, when examined, like a mixture of blood and brain. The last cases are necessarily fatal: but it will be seen that when blood has been effused from the giving way of a vessel (in the cerebrum and cerebellum, at least), without external violence, the part has a power of self-restoration.

A different instance of cerebral restoration occurs after hernia cerebri: when the extruded part has separated, and healthy action supervenes, the exposed surface becomes covered with granulations, resembling those which form on other tissues, and which coalesce with the granulations of the dura mater and integuments, to form a cicatrix.

b. When a considerable vessel gives way within or upon the cerebral substance, blood is freely poured out. It may escape upon the external surface, or into the ventricles, or into the cerebral substance. The two former cases are necessarily fatal; the third is not so. Blood effused into the substance of the brain is generally collected into an irregularly round mass, varying from the size of a pea to that of a hen's egg, or orange *. It is either of dark red, or almost black; coagulated, wholly or in part. The cerebral substance in contact with the cord is always more or less ragged, and portions of it are sometimes broken down and mixed with this fluid. The lacerated cerebral substance forming the walls of the excavation, which contains the blood, presents a number of dark points, or dots, of coagulated blood, many of which indicate the orifices of ruptured vessels.

The blood which has been effused gradually changes in colour: the red deepens till it amounts to black; the colour then successively passes to brown, dull green, orange, pale yellow, or yellowish white. When the latter changes of colour have taken place, and the fibrin, separated from the other constituents of the blood, has assumed a fibrous laminated appearance, blood-vessels are observed to form in it. The subsequent changes are of two kinds: the structure may either retain for a long time its primitive arrangement, that of fibrin, and afterwards become converted into a firm fibrous tissue, which, gradually diminishing in bulk, is at last reduced to a small circumscribed thin portion, which constitutes the cicatrix of the original lesion of the brain; or the organized fibrinous substance may be converted into a

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* In this account of cerebral hæmorrhage, and afterwards in that of softening, I borrow freely from Dr. Carswell's important work on Pathological Anatomy.

loose cellular tissue, filled with a serous fluid, and is generally traversed by a considerable number of blood-vessels. As the quantity of the serous fluid increases, that of the cellular tissue diminishes, as well as the number and size of the blood-vessels with which it was before provided. In this manner a cavity of considerable extent is formed, filled with serum of a citron colour, and bounded by the remaining cellular tissue in contact with the substance of the brain. It is this portion of the cellular tissue, which appears to be transformed into the yellowish serous membrane, which afterwards lines the entire surface of the cavity, and which converts it into the apoplectic serous cyst. The obliteration of this cyst is the next circumstance which takes place in the progress of cure. This is accomplished by the gradual removal of the serum contained in the cyst, and the consequent approximation of its walls, which become united and form a cicatrix. Lastly, the cicatrix itself, whether formed in this manner or in the manner previously described, disappears; such, at least, seems to have happened in cases of paralysis which have undergone a complete cure.

c. In this tissue every variation of condition becomes of moment. The quantity of blood contained in its vessels deserves and admits of being accurately noted. In hyperæmia, it may be observed whether the increased quantity be in the capillaries or in the veins, or both; in anæmia, whether their emptiness result from compression of the vessels, or from other causes.

d. Hypertrophy.—The cerebral substance is susceptible of hypertrophy. The following instance, which I quote from Andral, describes the appearance of the brain when in this state. The age of the patient at his death was 29. On opening the head, the membranes did not present any unusual appearance; but the character of the upper surface of the brain was strikingly peculiar: the intervals between the convolutions had disappeared; there was no fluid between the arachnoid and pia mater, nor in the ventricles. Upon a section, the brain appeared bloodless; it was singularly firm, having the consistence and elasticity of white of egg; the cineritious substance of the convolutions, and of the striated bodies and thalami, had lost its natural colour, so as to be distinguishable with difficulty from the medullary substance. The convolutions at the base of the brain, the cerebellum, and the annular protuberance, presented a healthy appearance.

e. Atrophy.—The cerebral substance is liable to atrophy. The instances which Andral gives, as exemplifying this state, appear to me, however, cases either of imperfect development, or of recovery from hæmorrhages or other diseases. Nevertheless, there properly exist two forms of atrophy of the brain and spinal marrow, both produced by pressure. In the one case the cerebral substance is diminished in volume at the part compressed, with no change of structure; in the other the diminution is attended with hardening. The first I have seen both in the brain and spinal marrow. Of both the first and second, Andral gives instances under other heads.

f. Inflammation of the cerebral substance.—The general effect of acute inflammation is to diminish the consistence of parts. This effect is primarily produced by effusion of serum from the capillaries; afterwards the deficient nutrition of the inflamed part contributes to deprive it of its natural cohesion.

The effects of inflammation upon this tissue are the following:—The degree of *softening* of the cerebral substance from this cause may vary from a slight diminution of the natural consistence of the part affected, to that of cream or milk. The first stage of the softening is often so slight as to be hardly perceptible to the touch, so that even when considerable, if not accompanied by some peculiarity of colour, it may be easily overlooked. A gentle stream of water allowed to fall upon suspected surfaces of the cerebral substance, is the best means of ascertaining whether a portion of it has undergone a diminution of its natural consistence. As yet the cerebral substance is not broken down; it has only lost a certain degree of its cohesion: it is still continuous with the firm substance by which it is surrounded. In the second stage, the diminution of consistence is so great as to be recognized at first sight. Upon a section being made through it, the softened substance sinks by its own weight beneath the least of the rest of the cut surface; while parts that are naturally prominent, such as the thalami, corpora striata, and convolutions, being involved in the softening, are sensibly flattened. In the third stage, a solution of continuity has been effected by the separation and partial removal of the softened cerebral substance. The dissolved texture, now of the consistence of cream or milk, is contained in an excavation of variable extent, situated in the substance of the brain, or confined between the membranes and convolutions of this organ. The colour of the softened part is liable to be modified by an admixture either of blood or pus; and its consistence, at the same stage of the disease, by the greater or less proportion of membrane which remains undissolved in the softened cerebral substance.

The nervous matter adjoining the softened part presents traces of increased vascularity, often in a very high degree; it is occasionally found hardened at different points for a small extent, as another result of inflammatory action.

Abscess.—Abscess in the cerebral substance is another consequence of inflammation. In general the matter is contained in a membranous cyst; and the process of its formation differs from softening in this alone, that a complete instead of a partial absorption of the inflamed substance is effected, from the cavity of the abscess. Sometimes depôts of matter are found in the cerebral substance, not contained in a cyst, but directly in contact with the nervous matter.

Of softening less evidently dependant on inflammation.—This is of two kinds: one of them, which, indeed, is attributed by Dr. Carswell to inflammation, is thus described by him:—Pale softening in the white and brown substance of the brain is a frequent occurrence in hydrocephalus; and it is also this variety of softening which is sometimes met with in those fevers in which the brain is primarily or secondarily affected. In such cases the substance of the brain, in general, is pale; its vascular system contains but a small quantity of blood. The other results from disease of the arteries of the brain, with obstruction or obliteration of their cavities. It is distinguished, however, from inflammatory softening by the presence of these diseased vessels alone; and as senile gangrene from the same cause is preceded by inflammation, it is far from clear that this softening has not likewise its precursory inflammation.

g. Of hardening.—It has been already mentioned, that in the neighbourhood of a softening of the brain, the inflamed texture is sometimes, at one or more points, preternaturally hard. In an instance of hernia cerebri which was under my care, the cineritious matter of a portion of brain, which protruded and was removed, had acquired an almost cartilaginous hardness; it was of a blueish-grey colour. The medullary matter, though hardened, was less so than the cineritious. Atrophy, or diminution of a part of the enkephalon from pressure, is liable to be attended with hardening.

h. Strumous and scirrhous tubercles, melanoma, medullary sarcoma, form in the cerebral substance.

II. *Of the pia mater.*—The external surface of the pia mater naturally secretes a certain quantity of transparent liquid, the use of which is to keep up an equal pressure upon all the irregular surfaces of the brain and spinal marrow. Its abnormal increase is very frequent; sometimes it may arise from obstruction of the cerebral veins—sometimes, as it is possible to imagine, from feebleness of the cerebral circulation,—but in general it is the consequence of a low degree of inflammation.

In a higher stage of inflammation, the pia mater secretes semi-opaque or lactescent serum, containing albuminous flakes—purulent serum—pus. These deposits are more frequent upon the surface of the brain than in the ventricles.

Cysts containing serum are found in the pia mater, both of the chorioid plexuses, and on the surface of the brain.

Flakes of semitransparent elastic substance, resembling cartilage, varying in size and number, are found between the pia mater and arachnoid. It is conjectured that they are formed in the cellular tissue, which unites the two membranes.

Deposits of tuberculous matter, and of white matter of the same consistence, are met with, singly, or in groups—as miliary tubercles of the pia mater. The glandulæ Pacchioni are probably substances of this description.

III. *Of the arachnoid membrane.*—Alterations of the arachnoid are less frequent than those of the pia mater. The arachnoid, however, is liable to be inflamed—to become slightly thickened and opaque—to secrete a viscid serosity—to secrete pus,—to secrete lymph, which forms layers of false membrane, that for a time remain nearly unattached, but subsequently become organized, and cohere strongly with the arachnoid. The opposed surfaces of the two layers of the arachnoid are liable to contract partial adhesions of the consistence of pleuritic bands.

IV. *Of the dura mater.*—The dura mater has two important relations—one to the cranial bones, of which it constitutes the principal periosteum: through this relation, it becomes the seat of all those alterations of structure which originate on the superfices of the bones. These changes have been already adverted to. To follow its second relation,—upon its inner surface the dura mater adheres to the reflected arachnoid, and rests against the soft substance of the brain, between the divisions of which it sends falces and tentoria. The habitudes under disease of its cerebral surface and productions are now to be considered.

The dura mater is susceptible of inflammation. Blood is sometimes found effused between the dura mater and the arachnoid lining it, which that effusion has detached. Small collections of pus have likewise been found in the same situation.

Fibrous tumors, of the size of a nut, and larger, and of a tissue resembling that of the dura mater, sometimes grow from its

inner surface; they commonly adhere to it by a narrow pedicle.

Tumors of a similar appearance are occasionally met with, which contain deposits of phosphate of lime, constituting osteo-fibrous tumors.

Phosphate of lime is frequently deposited, in flattened masses, between the layers of the processes of the dura mater, especially in the falx cerebri.

In the vertebral canal, the external surface of the dura mater has not a periosteal character. In this situation it is liable to give origin to deposits of the consistence of tuberculous matter, either white or yellow, with which melanoma may be mixed.

Having thus gone over the various morbid changes which have been observed in the tissues contained in the cranial cavity and vertebral canal, I am disposed, before enumerating the diseases which they produce, to consider a question, the solution of which must be sought in the natural anatomy of these parts.

When palsy is produced by disease of one hemisphere of the cerebrum or cerebellum, it commonly affects the *opposite side* of the frame. Through what channel does this take place?

The analogy of the nerves leads us to conclude, that the transit of impressions in the brain follows the course of the fasciculi of the cerebral substance. This analogy is strengthened by the single case of transit of function in the enkephalon, from one side to the other, the course of which has been ascertained: the case to which I allude is this. A connexion exists between one optic thalamus and the opposite eye: that connexion is certainly maintained by nervous fasciculi, which pass from one thalamus to the opposite eye-ball. Following this analogy, we expect to find, in some part of the structure of the brain, a crossing of fasciculi from one side to the other—some interchange—some decussation—by means of which, in the case before us, the transit of the palsy-stroke to *the opposite side* may be explained.

Several circumstances concur in pointing out the decussation of the anterior pyramids (at the part where the medulla oblongata joins the spinal marrow), as the probable channel through which the paralyzing impression is made. In the first place, this decussation, or transfer of fasciculi from one side to the other, *is the only one* that has been detected in the central masses of the enkephalon. In the second place, there is important evidence to prove that the point, at which the transit of the palsy-stroke takes place, must be somewhere about this part. The evidence to which I refer, is contained in a very interesting paper, by Dr. Yelloly, in the first volume of the Medico-Chirurgical Transactions. It seems to me satisfactorily to determine that there are certain limits between which the place of transit must lie. It consists of an experiment made by Sir Astley Cooper, and of a case that was witnessed by Dr. Yelloly himself.

The experiment was this. The spinal marrow of a dog was exposed between the atlas and the occiput, and one half (*the right half*) divided. The animal became palsied on the *right side*;—showing, as it appears to me, that the transposition of fasciculi sought for must be above the part cut through in this experiment.

The case given by Dr. Yelloly is the following. A patient died, having been afflicted with palsy of the right side. On examining the head, no diseased appearance was found on the right side; but on the left, a tumor was discovered in the annular protuberance: it was about the size of a hazel nut, and was lying on, or sunk into, the protuberance, at its inferior part on the left side. It extended to the corpus pyramidale of the same side. This case appears to me almost to prove that the place of the transit of the palsy-stroke is *below the annular protuberance.*

The next point in the inquiry is, whether, admitting that the anterior pyramids are in the situation where the transit of the paralyzing influence is made, the connexions of these fasciculi is such as reasonably to account for the phenomena of partial palsy, which have been observed.

The principal of these phenomena, or those in accounting for which any difficulty exists, are referable to three heads.

1. Hemiplegia of part or the whole of one side of the body, from disease or injury of the opposite hemisphere of the cerebrum.

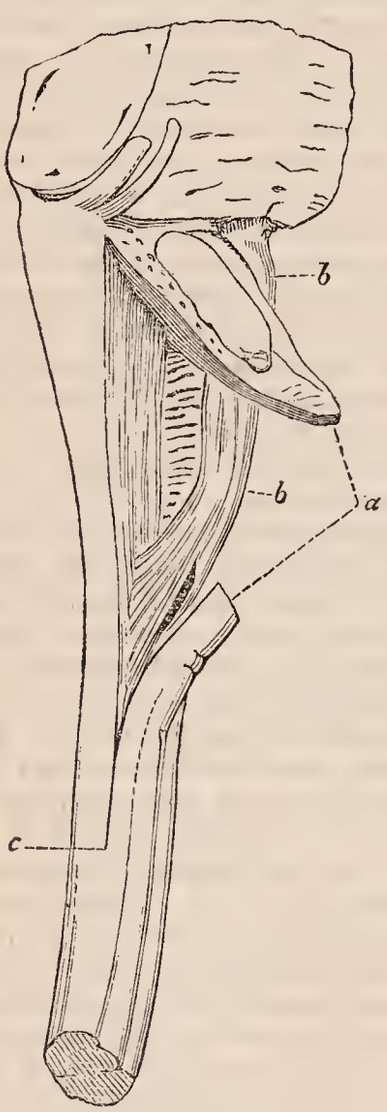
2. Hemiplegia of part or the whole of one side of the body, and *of the same side of the face*, from disease or injury of the opposite hemisphere of the cerebrum.

3. Hemiplegia of part or the whole of one side of the body, from affection of the opposite hemisphere of the cerebellum.

It appears, at first sight, that the decussation of the anterior pyramids, which is the only decussation to be found in the medulla oblongata, [that recently described by Sir Charles Bell, in the Philosophical Transactions, certainly not existing] will serve well enough to explain the first of these cases specified, inasmuch as it takes place above the origin of all the spinal nerves. Yet it is not, in truth, so sure a conclusion as it at first appears, that this decussation will account for *all* the phenomena. In palsy of one side of the body, *sensation is often impaired as well as motion.* Is there, in the terminal distribution of the fibres of the anterior pyramid, that which will equally

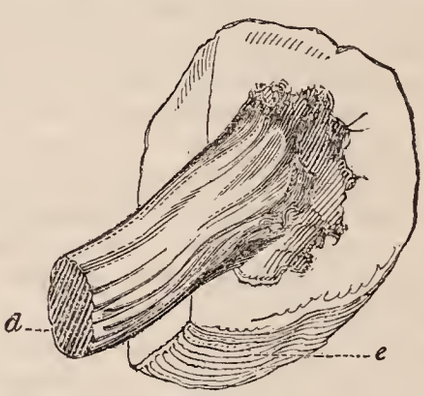
account for *both* these phenomena? I answer that there is. But, to establish this point, it may be desirable that I should minutely describe (and the adjoined figures will assist the description) what the points of structure are, to which I refer.

The decussation is effected by filaments of the two anterior pyramids passing over in four fasciculi (the uppermost the largest) that descend obliquely, crossing their opposites, to plunge into the centre of the opposite half of the spinal marrow. In the first figure adjoined, I have delineated the course of the uppermost of the fasciculi of the anterior pyramid of one side.



The anatomical reader will see that the figure represents a portion of the tuber annulare, with the medulla oblongata, and a part of the spinal marrow, seen obliquely in half profile from the front. The letter *a* is attached to the anterior and lateral portion of the spinal marrow and medulla oblongata, on the side turned to the observer, and shews the point at which the right half of the cord has been (in the preparation) partially transversely divided. The letter *d* marks the lower extremity of a line, at which the anterior and lateral fasciculi (divided at *a*) of the spinal cord and medulla oblongata were separated from the lateral and posterior fasciculi. The preparation displays the manner in which the uppermost decussating fascieulus of one anterior pyramid (*b*) throws its fibres obliquely downwards into the centre of the opposite half of the spinal marrow. A point of additional interest shewn in this preparation, and presently to be referred to, is the mode in which the filaments, which are ascending from the right side of the spinal marrow to the same side of the medulla oblongata, are implicated with the descending fibres derived from the opposite pyramid (*b*).

But for the present, let us follow the former point alone, namely, the connexion of the decussating fibres with all parts of the opposite segment of the spinal cord. To make this matter clearer, I have given another, but very imperfect,



figure, which represents, on a scale about three times magnified, the uppermost decussating fasciculus, *d*, of one of the anterior pyramids, followed into the upper part of the opposite half of the spinal marrow; the latter has been separated from the medulla oblongata by a transverse section, the surface of which is presented to view. The letter *e*, in the diagram, points to the anterior surface of the segment of the cord. The figure is intended to represent the mode in which the fasciculus, *d*, plunges into the centre of *both of the cineritious capsules*, which occupy, the one the anterior or motor region, the other the posterior or sentient region, of the spinal marrow,—besides extending into the lateral part.

It thus appears sufficiently established, that on the supposition that a paralyzing influence can be conveyed along the anterior pyramid, it may be thrown by the terminal fasciculi of the latter upon both elements of the spinal cord, and may affect through this channel sensation and motion equally.

2. But if it should be admitted that the structure which has been thus displayed explains well enough the phenomena of the first case, how will it apply to the second? How is to be explained, through it, the very common occurrence of disease of one hemisphere of the cerebrum producing *palsy, not only of the opposite side of*

the body, but likewise of the opposite side of the face? How can the decussation which has been described influence the portio dura of the opposite side, which rises from the medulla oblongata an inch above it? and how does it miss striking with palsy the portio dura of its own side?

The latter question is easily answered. The anterior pyramid is in no ways implicated, in its descent, with the portio dura (or with the fifth nerve) of its own side; it therefore could not be expected to affect either of those nerves. But how can it influence the same nerves of the opposite side? I am afraid the only conjecture which I have to offer will be hardly thought satisfactory, but it is this: when the terminal fibres of the anterior pyramid expand into the centre of the opposite half of the spinal cord, they are, as I have represented in figure 1, closely implicated with fasciculi of the cord, which are ascending directly to the spot at which the portio dura of that side rises. Is it impossible that these fasciculi, the production of which downwards we may readily admit to carry the palsy stroke in that direction, should carry *upwards likewise*, to the seventh and fifth, the same influence?

3. But a question of greater apparent difficulty still remains. How can disease of one hemisphere of the cerebellum influence the opposite side of the spinal marrow through the anterior pyramids? This question again, however, admits of an hypothetical answer. If the preceding explanation be admitted, it is easy to find a parallel explanation of this instance. The transverse fibres of the annular protuberance are formed of fasciculi, which emerge from the hemispheres of the cerebellum. When one side of the cerebellum is diseased, it is natural to suppose that some effect is produced by the disease upon the fibres of the same side of the annular protuberance. But across and between those fibres, the fasciculi of the anterior pyramid descend, with a wonderful closeness of interlacing. Is it impossible that, in this contact and close pressure (for no continuity is traceable), the paralyzing force proceeding from the diseased hemisphere of the cerebellum along the transverse fibres of the annular protuberance, should impart its influence to the fibres of the pyramid that are intermingled with the former?

It may be asked by some, why disease of the cerebellum should not communicate the palsy shock to the spinal cord, through the fasciculi of the corpora restiformia? The obvious and only answer consists in referring to the fact, *that it does not*. The corpora restiformia descend from the hemispheres of the cerebellum, each along the lateral and posterior part of the cord: if palsy were transmitted by them, disease of one hemisphere of the cerebellum would produce suppression of sensation on the same side. Instead of this, it produces muscular palsy, with or without anæsthesia of the opposite.

One consideration appears to me to give a shadow of value to the hypothetical explanations which I have advanced. The palsy of the opposite side of the body is often strongly developed and decided, without palsy of the face attending it. But if the route of the palsy stroke for the facial nerves lay *downward*, how should these nerves ever escape? On the other hand, supposing the palsy stroke to be reflected upwards, (agreeably with my hypothesis) would not its natural course be to attack first the portio dura, which lies directly in its way; perhaps the eighth, ninth, and fifth, or either of them capriciously, as their origins are not far apart? it could hardly extend its influence as high as to the third;—but this is exactly what happens in different cases of hemiplegia.

Finally, an expression has occurred repeatedly in these remarks which requires a full explanation. The decussating fasciculi of the anterior pyramids have been described as the channel of the *palsy stroke* in hemiplegia. Let me explain what I mean by this term *palsy stroke*, or *paralyzing influence* or *force*.

I do not think that the idea which commonly prevails as to the mode of the production of palsy, from disease of the enkephalon, is correct. The idea commonly entertained is, that palsy results from the *interruption*, or suppression, of the communication of some part of the brain with that part of the spinal cord or medulla oblongata in which the palsied nerves arise. I believe that such an *interruption* is not the cause. I rest this belief upon the history of acephalous infants, which have lived some period after birth, and on the results of equivalent mutilation made on animals. If the cerebrum, optic tubercles, and cerebellum, are cut away in a rabbit or guinea-pig, with a sharp instrument, and with the least possible violence to the adjacent parts, the mutilated animal is not palsied. It sits collected on its limbs, squeals when a hair of its whisker is pulled, moves its limbs co-ordinately, when one of them is injured; *exhibiting sensibility, and the capacity of voluntary motion*, as the acephalous infant does. Upon this evidence I believe that the *interruption of continuity* between the brain and medulla oblongata is not adequate to produce palsy, and is not the cause of hemiplegia. [The case is a widely different one from the division of a nerve, to which it is commonly assimilated.]

But I believe that the fasciculi which pass from the brain to the spinal cord are capable of *transmitting a palsying shock*. In a guinea-pig the cerebrum and cerebellum may be

cut away without materially disturbing the heart's action. But if, instead of separating them, (that instructive experiment, the force of which, in another relation, Dr. Wilson Philip has well pointed out, be made,)—if a part of the undetached cerebral masses be *crushed*, the heart's action is suddenly paralyzed; and in addition (which may be considered by some as more directly conclusive) through the animal's entire frame sensation and voluntary motion are at the same time instantaneously suspended. By the term palsy stroke, or paralyzing influence, I therefore mean to express, not a deficiency of excitement, not *the effect of an interruption of continuity*, but *the transmission of an impression suddenly or slowly* conveyed from the brain to the medulla oblongata and spinal marrow, with the effect of palsying more or less completely the voluntary nerves, or the sentient nerves, or both, which arise from those parts.

There are some important features in hemiplegia which agree curiously with the view which I have thus advanced. The arm is more frequently palsied than the whole side;—in palsy of the entire side the disease first attacks the arm, then the leg;—in recovery from hemiplegia, the leg recovers before the arm. It is evident that these phenomena are highly consistent with the hypothesis of a palsy stroke. The spinal cord and medulla oblongata, with the nerves proceeding from them, are sufficient, it is proved, for sensation and volition. Now the supposed palsying influence, propagated thither from the brain, would strike directly and first upon the upper part of the spinal marrow, and that should be first and principally paralyzed: if the palsying force were feeble, it might paralyze the upper part alone, or that which supplies the arm with nerves, leaving the lower part in the possession of its functions: if the force were considerable, it should reach (but perhaps after an interval) the lower extremity. In recovery, again, the part which would have been most feebly struck (the leg, by my hypothesis) would naturally be the first to mend. It is equally evident that these phenomena are irreconcileable with the idea of a deficiency of excitement from interruption of continuity being the cause of hemiplegia.

I would even venture to adduce the experiment made by Magendie of dividing one of the anterior pyramids in a living animal, without any sensible result, as a confirmation of the preceding views. To some, however, that experiment may appear to militate against them, and to shew that the anterior pyramids have no control over the voluntary or sentient nerves. In my mind the experiment has not the latter force. Upon the grounds already gone into I can suppose that a part can transmit a paralyzing influence in disease, the division of which part in a healthy animal would produce no distinct result. To make Magendie's experiment complete, and fit for use in this argument, it should be coupled with such an injury of the corresponding cerebral hemisphere as is calculated to produce hemiplegia. I think such an experiment might be made. But I have no intention of making it; for although I trust I am not less disposed than formerly to interrogate nature, I certainly begin to shrink from putting her to the question.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

In our last number, we gave a catalogue raisonné of the papers lately read at the Royal Medico-Chirurgical Society, but were obliged to postpone our fuller report, which is now given in the usual form.

Dr. Wilson Philip on the Sympathies of the more perfect Animals.

The author commenced by observing, that although many of the most celebrated writers in our profession have treated of the nature and laws of sympathy, the meaning of the term has remained vague, and its phenomena ill defined; a probable inference from which is, that all the facts relating to it have not been before us; that something has been overlooked which is essential to the clear understanding of the principles on which it depends.

It was necessary, in the first place, to define what is meant by the term Sympathy. According to Dr. Philip it includes those phenomena "in which distant parts influence each other, between which the mere structure of our bodies, compared with the phenomena, do not point out the exact channels of communication."

After stating the facts, from which it has been generally admitted that the phenomena of sympathy are produced through the medium of the nervous system, and those which have satisfied the best informed writers of our times, that they depend on changes which take place in the central parts of that system, and not, as was once supposed, in the nerves themselves, which appear, from a variety of facts, to be mere channels of communication, incapable of originating the changes observed in those phenomena, Dr. P. comes to the inferences to which he has been led, relating to the subject of his paper, by the physiological investigations in which he has been so long engaged.

"Is there a common centre of sympathy, or are there more than one such centre?" The author refers to an extensive set of experiments, undertaken for the purpose of determining the line of distinction between the sensorial and nervous functions, properly so called, and the relations these

functions bear to each other, and to the other functions of the living animal; from which it appears that as the muscular is independent of the nervous power, but in its various functions more or less subjected to it, the nervous, in like manner, is independent of the sensorial power, but in all its functions more or less under the influence of that power; and that in the more perfect animals there are two systems —the sensitive and the vital system—so distinct that all the functions of the latter remain after those of the former are finally lost.

It therefore follows, that if the functions of both are dependent on organs belonging to the brain and spinal marrow, as is evidently the case, it cannot be on the same organs; which is farther proved by the parts of the brain and spinal marrow, with which the organs of the sensitive and those of the vital system are associated, having different localities, and the functions of the one being often greatly impaired by disease, while those of the other remain wholly unaffected. Thus it is evident that, if both the vital and sensitive organs throughout the various parts of our frame sympathize, it cannot be through the same parts of the brain and spinal marrow. Their centres of sympathy, therefore, are different.

On the other hand, it appears from the facts stated in the paper before us, that the phenomena of sympathy themselves lead to the same conclusion, namely, that there is a centre of sympathy independent of the sensitive system, and therefore of our feelings — a fact on which depends one of the greatest difficulties which beset the practice of medicine, and which has led, and does still lead, to errors of the most fatal nature. While the sympathies of the sensitive system cannot fail to make themselves felt in the organs they influence, those of the vital system are often obscure, and generally too indistinct to enable us to regulate our plans of treatment by them, until a comparison of the symptoms with the appearances on dissection after death, has gradually unfolded the nature of such cases. For example, bilious headaches were at once referred to their source, but ages elapsed before the hydrocephalus internus was traced to the vital sympathies of the liver, and till thus traced it was almost uniformly fatal; because the cause which, at least in nineteen cases out of twenty, had produced, and was supporting it, was overlooked.

The obscurity of such cases is farther increased by the sensitive and vital sympathies not prevailing most in the same organs, so that disease often takes a fatal course with little or no affection of those organs, in which the sensitive, which are always the most prominent sympathies, are the most powerful. Of all our organs, the sensitive sympathies are most powerful in the stomach; but the most powerful vital sympathies belong to the liver. It is rare for the sympathies of the stomach essentially to influence the vital functions of distant parts, except through the intervention of the liver. Hence it is that the sympathies of the former are generally more distressing than dangerous, while in those of the latter—an organ of little sensibility—the suffering often bears no proportion to the risk. Without betraying themselves by any symptoms of a formidable appearance, or greatly affecting those organs, the sympathies of which, from their sensibility, are the most prominent, they may be undermining all the powers of life.

It is here, the author observes, that the practice of medicine is at present most defective. Dissection after death is constantly pointing out cases, the progress of which might have been checked, had we been aware of their nature before the secondary, generally the more formidable, affection shewed itself; or even after its appearance, had we been aware of the cause which had produced and was supporting it.

Our limits do not permit us to follow the author in his illustrations of the principles we have been considering, nor in what he says of the general laws of sympathy, the operation of which may be traced in the affections of all parts of the system. As he regards the vital sympathies as the means by which diseases of continuance become complicated, he considers the little attention which these sympathies have obtained, as the principal cause of the obscurity which attends almost all such cases.

Nor can we follow him in what he says of the other causes, which tend to give to the liver the influence possessed by it in the animal economy, and for a fuller account of which he refers to what is said in his Treatise on the influence of Minute Doses of Mercury, in restoring the functions of health. The most powerful of these causes is the peculiar influence of the liver on the brain, through which it appears, from the experiments above referred to, that not only the heart, but the vessels also in every part of the body, and that to their minutest ramifications, may be directly influenced in every way of which they are capable. A ready channel is thus opened, through which the state of the liver may influence any part of the frame, however distant.

The author ascribes to the circumstance of the vital sympathies of the liver being so powerful and extensive, the fact that in sultry climates, where the sympathies are most active, all diseases of continuance,

whether acute or chronic, terminate in derangement of this organ; and that even in such climates as our own we meet with few formidable diseases in which its affections do not form a more or less prominent part; and in which it is not necessary that the treatment should be more or less modified by the state of this organ.

His conclusion from all that is said in the paper is, that our object in all, and particularly diseases of continuance, should be to watch the vital sympathies, which little obtrude themselves on our attention, but powerfully influence the progress of disease; and which, although modified by causes which he points out in individual constitutions, are in their great outlines the same in all.

Cases of Mental Derangement successfully treated by the Acetate of Morphia. By Edward J. Seymour, M.D.

After some remarks on blood-letting in mania, Dr. Seymour proceeded to observe, that it is seldom attended with good effect, and that of late years, the soothing system has very generally been adopted by medical men; which system, founded, as it is, on true principles of physiology, is more likely to lead to success than any other. To diminish the increased and morbidly acute conceptions—to soften the sensibility of the organ, and reduce the exaggeration of its natural functions—seems to be the great object; and so far from such a condition being the result of too great a flow of blood to the head, morbidly stimulating the organ, it often occurs in those who have rather less blood than usual for the maintenance of life in the brain, occasioned by excessive evacuations, watching, anxiety, and by intemperate living.

About three years ago, Dr. Seymour published some lectures on this subject, in which he described the great advantage which had been derived, at the large Lunatic Establishment on Bethnal Green, by the preparations of morphia, under the care of Messrs. Beverley and Phillips; and in the present paper he detailed several cases which had occurred to him in private, and which illustrated the same principle.

A lady, aged about 48, was attacked in the month of August, 1833, after exposure to violent distress. Her mind was filled with gloomy ideas, from the imaginary neglect of great and solemn duties.

Her bodily health was unusually robust, and she had scarcely ever suffered from bodily ailments. In the first instance the patient was bled, and took repeated doses of purgative medicine, but without any beneficial effect.

It was now resolved to try the morphia, and a grain of the acetate was ordered to be taken every night, and the bowels to be kept open by small doses of castor-oil. Ice was kept to the head, in a bladder, day and night, for several days. The morphia never failed to procure a good night, and thus gradually, without any other remedy, the mind cleared up; but the morphia continued to be administered every night for three months, although all trace of insanity had disappeared six weeks from the commencement of the employment of the remedies. No relapse whatever has occurred in this patient.

Two other analogous cases are detailed, and several of a more chronic nature referred to, as having occurred in the author's practice, in which the success of the treatment was equally conspicuous. The remedy appears, according to Dr. Seymour's experience, to have been more remarkably useful in melancholia, "when the mind is tortured by imaginary want, ruin, or crime," than where the patient is possessed by the conceit of superiority (as of superhuman wisdom, &c.), or when it is exclusively engrossed by one all-absorbing idea.

INQUEST AT BRISTOL.

Medico-Legal Disinterment.

An exceedingly interesting case of poisoning has been investigated at Bristol during the last week. The body of the deceased was exhumed after fourteen months, and full proof of death by arsenic obtained from a medico-legal inspection of the stomach. A verdict of "Wilful murder" has been brought in against the accused. We shall give a full account of the medical evidence next week.

WEEKLY ACCOUNT of BURIALS,

From Bills of Mortality, *Dec.* 30, 1834.

Age and Debility	35	Brain	1
Apoplexy	6	Lungs and Pleura	13
Asthma	11	Insanity	1
Childbirth	4	Liver, diseased	2
Consumption	61	Measles	13
Convulsions	27	Miscarriage	1
Croup	3	Mortification	1
Dentition or Teething	8	Paralysis	2
Dropsy	9	Rheumatism	1
Dropsy on the Brain	18	Small-Pox	10
Erysipelas	1	Sore Throat and Quinsey	1
Fever	5	Spasms	1
Fever, Scarlet	8	Thrush	2
Fever, Typhus	1	Venereal	1
Gout	1	Worms	1
Heart, diseased	2	Unknown Causes	5
Hooping-Cough	9		
Inflammation Bowels & Stomach	27 2	Stillborn	15

METEOROLOGICAL JOURNAL.

Dec. 1834.	Thermometer.	Barometer.
Thursday . 18	from 33 to 47	30·18 to 30·20
Friday . . 19	35 49	30·21 30·14
Saturday . 20	37 47	30 09 30.05
Sunday . . 21	36 46	30 09 30·18
Monday . . 22	34 45	30·27 30·32
Tuesday . . 23	30 43	30·34 30·29
Wednesday 24	22 39	30·26 30·29

Wind variable, N. prevailing.

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THE

LONDON MEDICAL GAZETTE,

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WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, JANUARY 10, 1835.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture XV.

DISEASES OF THE PARENCHYMATOUS STRUCTURE OF THE LUNGS.

ADVENTITIOUS DEPOSITS.

I now call your attention to that class of diseases of the lungs which are consequent upon adventitious deposits in their structure.

Definition.—By adventitious deposits, we mean matters placed in the substance of an organ, foreign to its normal structure, depending upon an aberration of secretion or nutrition, and having for their consequences the atrophy or destruction of the organ, to a degree proportionate to their quantity and nature.

Inorganic and Organic.—There are two classes of adventitious deposits. The first we shall call inorganic, because no vessel has ever been seen to exist within them. They appear to grow by external accretion. The most important of these is *Tubercle*, the immediate cause of phthisis pulmonalis. The second are organic; so called because they are more or less vascular. They grow from within, and occasionally attain a considerable volume. The organic adventitious deposits have been considered by Cruveilhier as parasitical growths, connected with the living animal by a system of vessels plunging into their mass, and increasing it by the deposit of similar matter: these are of rare occurrence in the lungs: I shall dwell therefore but little upon them, but devote almost the whole of our attention to the important subject of tubercular disease.

TUBERCULAR DEPOSIT.

Tubercular matter has for its result the accumulation and succession of symptoms known under the appellation of *phthisis pulmonalis;* and observe, gentlemen, that I restrict that term to tubercular disease alone.

Tubercular matter may be defined to be an inorganic substance, varying in form; so that it may be isolated, or infiltrated in irregular masses in the substance of the lungs. It is usually at first gray, and semi-transparent, becoming afterwards yellow and opaque, being then called *crude.* It finally softens, and is expectorated, leaving an *excavation* in the lungs, which excavation may be lined with a false membrane. The cavity is then denominated a tubercular *fistula.* The parietes of the fistula may approach, unite, and form a *tubercular cicatrix.*

The following is a tabular view of the various forms which tubercular matter presents at its commencement:—

Isolated Tubercular Matter.

1. Miliary.
2. Granulations.
3. Encysted.

Infiltrated Tubercular Matter.

Gray.
Gelatiniform.

In whatever form the tubercular matter appears at the period of its primitive deposit, it subsequently becomes yellow and opaque, or, as it is called, *crude;* after which, the mode of destruction of all the forms is the same, and the effect upon the

lungs identical—that is to say, in its softening, formation of excavation, fistula, and cicatrix.

I shall first describe the various forms of tubercular matter in the lungs to the period of *crudity*, and then the common effects upon the pulmonary structure.

Miliary Tubercles.—Period 1st.—The first form to be considered is the miliary tubercle: its size is generally small, something like that of a millet seed: it appears to be round, at least to the unassisted eye; but on examining it with a powerful glass, it is found to be somewhat angular: its colour is gray, and it is transparent; its firmness is nearly equal to that of cartilage; it adheres with considerable force to the pulmonary structure, so much so, that on tearing away a tubercle you detach also a portion of the pulmonary substance. The position of these tubercles is most commonly in the cellular texture, separating the cells from each other; but they may also exist in any other part of the tissue of the lungs, as in the cells themselves. As to quantity, there may be very few—four, five, or six—or there may be thousands, for they are sometimes perfectly incalculable; I have seen the whole lungs completely gorged with them.

Period 2.—In the second period, the tubercle becomes enlarged by accretion to its external surface: it cannot grow from within, since it is inorganic, at least no injection can be made to penetrate it: another proof is, that however large that may become, the original form is still preserved. When there are few, the isolated tubercle may acquire a very considerable size, even to that of an almond. The colour now changes, and a small yellow spot is seen towards the centre, and this tint gradually pervades the whole of the tubercle to its circumference. In this stage it is called the crude yellow tubercle. These tubercles, in consequence of their increased growth, approximate to each other. Fresh ones form also in the intermediate pulmonary tissue, so that a large yellow amorphous, or irregular mass, of cartilaginous density, is the result. If you examine closely into a section of this mass, you will find that the tubercles are not so impacted as to prevent their original rounded form being here and there observable.

Tubercular Granulations.—They are very small, and generally perfectly uniform in their volume; their form is round or ovoid, their colour gray and transparent, and they exist in innumerable quantities in the otherwise healthy lungs: these tubercles generally continue isolated, and rarely form in groups; when they do, a section of the nucleus or mass shews them still separated from each other, by a tissue perfectly or slightly infiltrated with serum.

The centre of the granular, like the miliary tubercle, becomes yellow and opaque, which appearances gradually spread to its circumference, and then it is called *Crude.*

A dark spot is to be seen in the centre of either the miliary or granular tubercle, which disappears as the adventitious deposit enlarges. This coloration probably depends upon the presence of a particle of black pulmonary matter. They may also become coloured by the accidental presence of another disease; thus icterus will give them a yellow tinge, particularly on their surface, and in gangrene of the lungs they become black.

It sometimes occurs that, in consequence of the immense accumulation of tubercles, death may result before the process of softening takes place: these cases are very rare; I have seen but two or three.

Encysted Tubercles.—The next species, the encysted tubercles, is so rare that I have never seen a single instance of it, and Laennec, in the space of twenty-four years, only met with three or four: he describes the cyst to be of the consistence of cartilage, that internally it is rugous, although the rugæ are smooth, and polished. Its external surface is attached firmly to the pulmonary texture, and the tubercular matter is so loosely adherent to the interior as to be very easily separated from it.

Gray Tubercular Infiltration.—This infiltration is frequently formed around tubercular excavations: it exists, though very rarely, independently of isolated tubercles: it forms large masses of a somewhat transparent grayish appearance. Under these circumstances, the pulmonary tissue is of a cartilaginous density, humid, and perfectly impermeable to air: if, then, sections of it be made, their surfaces are smooth and polished, of a homogeneous texture, and the pulmonary cells are no longer distinguishable: small yellow and opaque spots appear disseminated in the mass; they gradually enlarge and unite, until the whole is converted into a body of *crude tubercular infiltration.*

Gelatiniform Tubercular Infiltration.—Between miliary tubercles, there is often found a matter of the consistence of jelly, colourless or slightly sanguineous; the natural appearance of pulmonary structure is there utterly lost, no air-cells can then be seen: gradually this matter becomes more consistent, and is transformed into the species just described; yellow spots are frequently seen in the most liquid and transparent part of the deposit, shewing the commencement of its conversion into crude tubercular infiltration. This

formation is probably only a modification or germ of the preceding species.

The transformation of these two forms of tubercular infiltration into the crude state, is sometimes so rapid as to present no traces of their primitive appearances: they then are seen in irregular masses of a palish yellow colour, of an angular, but never of the rounded form of ordinary tubercles. The tubercular matter is here evidently infiltrated into the pulmonary tissue, totally destroying it, so that no remains of its texture are visible, whilst the miliary tubercle is plunged into the substance of the lungs, compressing but not uniting with it molecule by molecule. These masses often occupy a considerable portion of the organ, but never project beyond its surface.

Softening of the Tubercular Matter.—In whatever form the tubercular matter be first deposited, when it has arrived at the crude state, it softens and liquifies; this softening commences at the centre of each tubercle or tubercular mass, or if the mass be considerable, simultaneously at many points. Some authors assert that this process begins at the external surface: that it may occasionally do so, I do not deny; but, gentlemen, examine for yourselves, and you will find, on making a section of crude isolated tubercles, that the greater number of them are perfectly soft within, whilst their external parts are still in a state of considerable firmness. The softening proceeds until at last it affects the whole tubercle or mass of tubercles.

The softened matter may appear in two forms; sometimes it is like a thick pus, inodorous, and of a yellower colour than the crude tubercle; sometimes it is of the consistence of soft and friable cheese: this latter state occurs principally in scrophulous individuals, in whom also the matter is occasionally like fragments of curdy substance floating in whey.

According to Thenard's analysis, tubercular matter consists of

Animal matter, principally fibrine and gelatine.....	98.15.
Muriate of soda, phosphate of lime, carbonate of lime	1.85.
Oxide of iron, a few traces.	

Tubercular Excavation.—When the tubercular matter is completely softened, it bursts into the nearest bronchial tubes, and is gradually expectorated, leaving an excavation in the lung: the orifice of communication being narrower than the excavation into which it opens, becomes, as well as the cavity itself, fistulous.

It is rare to find one excavation only; it is generally surrounded by miliary tubercles, or masses of tubercular infiltration, which gradually soften in their turn, and burst into the primitive cavity, often forming irregular sinuses, communicating more or less freely with each other, and occasionally extending to the very extremity of the lung.

It is in this way that bodies, presenting somewhat the appearance of the carnæ columnæ of the ventricles of the heart, are seen to traverse these excavations: they are usually thinner at their centres than at their parietal extremities, and were thought by Boyle to be blood-vessels: they are, however, merely portions of lung in a state of crude infiltration. Often, too, masses of lung of amorphous forms are attached to the parietes of the cavity, hanging loosely within it: there are also pieces of lung in a similar state. It has happened, though rarely, that a small portion of these masses has broken off, and remained in the excavation as a foreign body.

The columns or masses I have described, form, in their interstices, by their confused arrangement, a series of irregular sinuses rather than cavities; or you may consider the whole a general excavation, intersected by a number of incomplete partitions: it then may be called a *multilocular tubercular excavation.* As these infiltrated masses successively break down, the cavity becomes more open; and when their obstruction is complete, it is called *a unilocular tubercular excavation.*

The tubercular matter appears to throw aside the large blood-vessels, for they are often seen spreading along the parietes of the excavations: these vessels are frequently flattened, though but rarely obliterated, except in their ramifications directed towards the cavity, for no coloured matter can be made to penetrate the excavation. This fact was also observed by Storck and Baillie: Storck found these vascular extremities obliterated by coagulated blood. The vessels passing into the columns become impervious a little after they have entered into them.

The bronchial tubes, instead of being thrown aside, are evidently enveloped in the tubercular mass, and become involved in the general destruction of the portion of the lung in which they are placed, so that these vessels are not opened at their sides to transmit the softened matter, but appear clearly cut at the level of the parietes of the cavity.

One or many bronchial tubes always open into a tubercular excavation.

Tubercular Fistula.—As the excavation becomes emptied of its softened contents, its parietes are covered by an opaque, thin, soft, and friable membrane, which may easily be detached. It usually lines the

whole cavity: sometimes, however, a partial pseudo-membranous exudation is found, thicker, of greater transparency, less friable, and more adherent: its thickness, however, is generally unequal.

Often, the last-described membrane is super-imposed upon the previous one; it is then but loosely attached, and is even lacerated at many points, so that the second membrane appears to be only the primitive stage of the first.

The two membranes I have already described are succeeded by a third, which completely lines the parietes of the excavations; it presents a greenish tint, is unequal in its thickness in different parts of the cavity, and is of semi-cartilaginous density. The tubercular fistula may now be said to be completely formed.

Tubercular Cicatrix.—Tubercular fistula is evidently the result of nature's efforts to cure the disease by establishing an internal cicatrix; but the healing process is sometimes carried on still farther, by the parietes of the tubercular excavation closing and uniting with each other, and completely obliterating it: I have seen many instances of this process, and there are before you preparations demonstrating it. In one case there had been a considerable cavity in the upper lobe of the right lung, and the parietes of its superior part being thin, and not adherent to the costal pleura, collapsed, and fell upon the floor of the excavation, and firmly united with it, so as to form a complete cicatrix. You perceive, gentlemen, that the lung offers a puckered appearance, arising from the manner in which the parietes of the cavity had drawn with it that portion of the lung situated above it which had not been destroyed. On pressing the cicatrix it gives the resistance of cartilage. The cicatrix is here in a horizontal direction.

I present you with a preparation in which the cicatrization of the cavity had proceeded in a direction perpendicular to the lung. The cavity had evidently been of considerable size, its sides had collapsed, united, and formed a large cicatrix. You perceive, by closely examining the section of it, that it consists of two layers of cartilage, almost completely united at all points; leaving, however, here and there, light separations, shewing that the union had not been perfectly effected. In the same preparation there is a section of another cicatrix which takes an oblique direction.

It sometimes occurs, as I have already stated, that, when there is a vast accumulation of tubercles in the lungs, death takes place, whilst they are yet in the gray state, or at least not advanced beyond the period of crudity. It occasionally happens that when there are but few, they are all found softened, or that excavations are completely formed; far more commonly, however, the tubercular matter is discovered in every state, from the gray and transparent to the final cicatrization of the excavations formed by them. Thus this deposit is almost invariably first placed in the superior lobes of the lungs; there, consequently, the process of destruction originates, the excavation is primitively formed, and the rest of the organ may be healthy, and perfectly free from tubercles; but it is more usual to find them crude or softened, and excavated, in the upper lobes, and gray, transparent, and frequently in innumerable quantities, in the middle or lower. From these appearances it is inferred, that all the tubercular matter found in the lungs could not be deposited at once, but that it is formed in successive crops. It is indeed difficult to conceive that so large a quantity as is sometimes seen could have been deposited at one effort, or being so, what could have retarded their destruction in some parts of the lung, and accelerated it in others. It is much more reasonable to suppose that these deposits occur at successive periods.

I have now, gentlemen, demonstrated to you the various forms and the mode of destruction of the tubercular adventitious deposit in the lungs: you have seen that it may exist in that organ in the isolated state, or infiltrated into its substance; that the matter is primitively of a gray colour and transparent, afterwards becoming yellow and opaque; that then nature endeavours to reject it to the exterior by softening it, and thus putting it into a form in which it can be readily expectorated; that the result of the softening is the partial destruction of the lung by the formation of a cavity within it; that nature endeavours to repair the loss by converting the cavity into a fistula; and that occasionally the reparation is rendered still more complete by the union of the parietes of the fistula, and the consequent formation of a cicatrix.

We have thus, gentlemen, studied the tubercular deposit as it occurs in the lungs; let us now examine certain conditions of the body, caused by or concomitant to this adventitious formation.

Tubercular matter is rarely found in the lungs alone, it co-exists in various other organs. Laennec did not neglect this part of the subject, but has given us a list of the different parts in which they may be found, placing the organs in the inverse order of the frequency of deposit; thus they are seen, in the following table, existing most commonly in the lungs, then in the bronchial glands, then the mediastinal, &c.

Lungs.	Epididymis.
Bronchic glands.	Testes.
Mediastinal glands.	Spleen.
Glandulæ eoneatenatæ.	Heart.
Mesenteric glands.	Uterus.
All the other conglobate glands.	Cerebrum.
Liver.	Cerebellum.
Prostate gland.	Base of cranium.
Peritoneum.	Bodies of vertebræ.
Pleura.	Intervertebral substance.
In the false membranes formed in the peritoneum and pleura.	The bones.
	In eaneers.
	Voluntary muscles.

Louis has examined this subjeet still more minutely, and has formed the following table, after the examination of 350 subjects who had died of phthisis.

In the above number, tubercles were found in the following proportions:—In the

Small intestines	$\frac{1}{3}$
Large intestines	$\frac{1}{9}$
Mesenteric glands	$\frac{1}{4}$
Cervical glands	$\frac{1}{10}$
Lumbar glands	$\frac{1}{12}$
Prostate	$\frac{1}{13}$
Spleen	$\frac{1}{14}$
Ovaries	$\frac{1}{20}$
Kidneys	$\frac{1}{40}$
Uterus, Brain, Cerebellum, Spinal eord, Ureters — In one subjeet only.	

It has been observed, that tubereular matter has been deposited in the right lung more frequently than the left, and that it exists more commonly in men than women.

Lombard de Genèvc, on examining a vast number of children who had died of various diseases, found that the mortality arising from phthisis, compared with other affections, varied aecording to their ages. Thus—

It was rare in the fœtus, and in the first months of life.

From 1 to 2 years, it was found in		$\frac{1}{8}$
— 2 to 3	....	$\frac{2}{7}$
— 3 to 4	....	$\frac{4}{7}$
— 4 to 5	....	$\frac{3}{4}$

and from five years to the age of puberty, less frequently than from 4 to 5, but more than before 4 years.

You perceive, by the above table, that tubercular disease oceurred the least frequently before 2 years, and the most between 4 and 5.

Bayle had previously examined the proportion of deaths arising from phthisis, eompared with other diseases, and he found it to be nearly one-third, or as 244 is to 696. He found also that the periods at which death occurred from this disease after the age of puberty, in 100 eases, were as follows:

From 15 to 20 years of age, there died		10
— 20 to 30	....	23
— 30 to 40	....	23
— 40 to 50	....	21
— 50 to 60	....	15
— 60 to 70	....	8

Bayle examined 200 patients, with reference to the duration of the disease from its eommencement to its fatal termination. I think his table cannot entirely be depended upon, although it is no doubt as eorrect as the subject admits; for it is extremely difficult to obtain a precise history of a disease, espeeially from the lower classes of the people, who commonly date their complaints only from the period they became incapacitated from attending to their occupations.

Table of the Duration of Phthisis before Death was produced, in 200 *Cases.*

Quarters of the Year.	Half Years.	Years.	
1st quarter	16		
2d	44	1st half year 60	
3d	44		
4th	20	2d 64	1st year 124
	3d 30		
	4th 18	2d	48
		3d	6
		4th	5
		5th	3
		6th	1
		7th	3
		8th	1
		9th	3
		From the 9th to the 40th	6
			200

In reference to the seasons of the year in which the mortality occurred, he found it as follows in 240 cases:—

There died in the spring	54
——————summer	68
——————autumn	64
——————winter	54
	240

We find that various lesions of different organs of the body are consequent upon the existence of tubercles in the lungs. Louis has investigated this subject with great patience; and the following observations are principally derived from his work.

The absorption of the fat in the cellular tissue is often extraordinary: this secretion diminishes greatly in the orbits, so that the eyes sink; between the buccinators and masseters it disappears; and the rotundity of the cheek is lost; in extreme cases, the outer surfaces of the teeth are seen elevating the skin upon them, giving, as Aretæus expresses it, the appearance of a ghastly grim or smile. From the loss of the soft parts, the malar bones appear projecting. The fat of the whole body becomes at last totally absorbed.

The intestines, brain, nerves, spleen, pancreas, and other glands, do not diminish.

The liver becomes larger, and is also fatty in about two-thirds of the cases. This appearance occurs more frequently in women than men.

The specific gravity of the bones diminishes; and where there is great marasmus, their circumference lessens.

The chest contracts at the sides from previous pleurisies, and often also at its anterior superior parts, in consequence of the presence of large and old excavations.

The muscles and the heart are smaller and redder than natural. The calibre of the aorta is generally diminished, and its internal surface is reddened in one-fourth of the cases.

The mucous surfaces are peculiarly subject to alterations. Louis found, in examining 102 subjects who had died of phthisis,

Ulceration of the larynx ..	in 23
——————epiglottis	in 18
——————trachea ..	in 31

In most cases the ulcers occupied the posterior surface of the air tube, and the laryngeal face of the epiglottis.

The stomach was affected in the following proportion in 96 cases of phthisis; and a comparison was also made by Louis of the same lesion of this organ in 96 cases of death from other chronic diseases.

Stomach enlarged to double or triple its volume.....	9 times.
Same lesion in 96 cases of other chronic diseases	2 do.
Softening, with thinning of mucous membrane of the stomach	19 do.
Same lesion in 96 cases of other chronic diseases	6 do.

The mucous membrane of the different parts of the intestinal tube was diseased in the following proportions:—

Duodenum—ulcerated, rarely.

The glandulæ agmenatæ of the jejunum and ileum ulcerated in five-sixths of the cases.

The mucous membrane of the small intestines were rarely thickened or softened.

The large intestines not so frequently ulcerated, but their mucous membrane softened in three-fourths of the cases.

Ileo-colic valve.—It is rare, indeed, not to find ulcerations there.

Fistula in ano often co-exists with tubercles in the lungs.

The whole of this lecture was elucidated by a series of preparations, shewing the various forms of the tubercular deposit in the different organs, and especially its changes in the lungs. The secondary lesions of the mucous surfaces were exemplified in the same way.

ON THE ORIGIN AND NATURE OF HYSTERIA.

By John Roberton, Esq.
Surgeon to the Manchester Lying-in Hospital.

[Concluded from p. 463.]

The distinguishing, I may say the essential, feature of the constitution liable to hysteria, is *a peculiar irritability of the nervous system, existing throughout the duration of life, and often manifesting itself in a degree greater than the power to resist particular hurtful impressions.* To this latter circumstance it is owing that various causes, mental as well as physical, produce certain effects (already characterized and partially enumerated) of the nature of disease—effects which, in the aggregate, have received the name of hysteria. The inordinate and peculiar irritability * I have spoken of, probably

* It is common to pretend great amusement at the vagueness of many of the terms used in medicine, but not always with sufficient reason. A word (*irritability*, for example) may be vague, merely because the *idea* for which it stands is vague.

in all cases originates in congenital defect in the nervous structure, although it may doubtless often afterwards be aggravated by a great variety of circumstances, the chief of which are derangement of the menstrual function —an idle, sedentary, luxurious manner of living—and the cultivation of the emotions and passions, to the neglect of the understanding *. I have said that there is probably always congenital defect of the nervous system; and the same observation may perhaps with some reason be extended to other systems of organs and parts, more especially to the digestive and assimilative organs; for although, in many instances, the hysteric patient is robust and vigorous, much more generally she is of slender, delicate make, capricious appetite, feeble digestion, and exceedingly variable bowels.

This opinion of the nature of hysteria I am desirous to state with as much clearness as possible, not simply because I think it the most tenable, but rather because of its leading (as I hope) to a just and comprehensive view of the nature of hysteria as a disease. That the multiform symptoms included under this vague name, which yet may be traced to a common parentage, are often (daily, I might say), mistaken for inflammatory and other organic diseases, and treated as such, to the immediate aggravation of the symptoms, and the lasting injury of the patient, is well known. It will therefore be useful to have pointed out, however imperfectly, the more uniform and abiding features of the hysteric constitution, that being caught by the eye of the attentive practitioner, he may thereby steer his course with some degree of assurance, where not a few have unhappily foundered.

A question naturally arises, how are we to distinguish hysteria from hypochondriasis? This often controverted point I have not space to discuss. The two may exist together in the same person, although I think that they are unquestionably different diseases. Hypochondriasis would seem to be an affection of the digestive organs modified by temperament; the prominent symptoms referable to the nervous system being timidity, continual dread of impending evils, with excessive attention to every bodily sensation, as though it indicated some latent but fatal disease. The complaint comes on gradually, increases progressively, and sometimes ends in structural disease of the abdominal viscera, of the brain, or other internal organs. Hysteria, on the contrary, comes on suddenly, with spasmodic affection of some part of the *primæ viæ*, and may as suddenly cease. True there is often timidity, and always a crowd of distressing sensations, but not necessarily, nor even ordinarily, despondency and valetudinarianism; nor, unless the exciting causes are very long and constantly applied, is there any tendency in hysteria to become gradually worse; and the ultimate effects are rarely, if ever, known to be structural disease. Upon this topic Cullen has the following admirable remarks:—"Purple is a compound of red and blue, and there are some purples in which it is difficult to say whether the red or the blue prevails; but in many other cases we distinguish them; and whether we can distinguish in all cases or not, this never embarrasses us in distinguishing between blue and red when these colours are totally separated. So these diseases may also be mixed in certain degrees; but that does not prevent them from being truly, and very often totally, distinct and distinguishable diseases; and after considering both the one and the other, I believe the difficulty of distinguishing them will seldom occur."

The exciting causes of hysteria admit of division into three classes. 1st. Such as immediately affect the mind; as surprise, terror, anger, grief. 2d. Such as plainly affect the body; long-continued pain, hurtful ingesta, great fatigue, sudden atmospheric change from dry to humid, the outstriking of eruptive complaints, disordered menstruation, &c. 3d. Obscure changes in the bodily health, that are rather inferred than actually observed.

There can be no question that hysteria readily occurs in the predisposed, whenever the menstrual function is deranged, suppressed, or performed with pain. This generally-acknowledged fact I fully admit, and regard it as the prin-

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When I witness a slight surprise, or a trivial disappointment, occasion in any one a burst of hysteric passion, I am led to express the impression made on my own mind by the term I think best fitted to excite a like idea in the mind of another; but the idea I have received being itself complex and vague, is surely not likely to be rendered more clear and definite by the use of any term that can be selected.

* "Si votre fille lit des romans à dix ans, elle aura des vapeurs à vingt."

cipal reason why hysteria is chiefly confined to the female sex. The following cases, however, illustrate the effects of certain exciting causes, where the menstrual function was in no respect faulty.

Mrs. S——, a widow, aged 56, lusty, usually in tolerable health, and who had ceased menstruating about seven years. I was hastily summoned to visit her, on account of what was thought an alarming seizure, when I found her in bed, cold, pallid, torpid; complaining of pain at the pit of the stomach, and about the umbilicus. This attack had been ushered in, a couple of hours before, by a violent paroxysm of hysteric crying and raving. The illness she ascribed to what she had eaten at dinner; but an attendant hinted to me that it was owing, not to what she had eaten, but to a piece of very distressing intelligence she had received, affecting the moral character of an old and valued housekeeper.

Miss M., aged 25, well formed, and healthy. I found her with a dull look, cold surface, feeble pulse; complaining of an intense head-ache, and manifestly affected with *globus*. There had been a succession of convulsive attacks. On careful inquiry, the menses, I found, were regular, and in every respect natural. I found also that the exciting cause was a severe and prolonged tooth-ache, which had deprived her of rest for several nights.

Mrs. H., aged 35, stout, plethoric, but very vigorous; the mother of a number of children. When I saw her she was sitting up in bed, the angles of her mouth strangely relaxed, the aspect dull and stupified, and having almost entire loss of the power of articulation. A little before my visit she had had a violent fit of laughter, and, on making inquiry, I learnt that this was not the first attack of the kind. As to the menses, they were in every respect regular. A general herpetic eruption, which was just becoming visible, that soon spread over large portions of the surface of the body, producing great irritation, was evidently the exciting cause.

Miss D., aged 28, robust in figure, but of feeble stomach and variable health. When I saw her, she was lying on the floor of a Sunday-school, whither she had gone after dinner, in what her friends around called a *shake—i. e.* she was screaming, and frightfully convulsed in the trunk and extremities, but not the face; these fits alternating with periods of calm. She had for years been a frequent sufferer from hysteric attacks: on the present occasion the exciting cause, in the opinion of her sister, who was in attendance, was a heavy dinner of roasted pork, which she had taken about half an hour before the commencement of the paroxysm.

Mrs. S., aged 24, twelve months married, without family. On entering the room, I saw a slim elegantly formed lady, lying on a sofa, in moderate convulsions. The contractions were chiefly in the lower and upper extremities; her thin but fine features being very slightly agitated. After a little, she was still, and faintly answered my queries; but the convulsions soon returned. The pulse was hurried and languid, and the surface cold. On particular inquiry, I was assured that the catamenia were, in every respect, natural and regular. She had been subject to such attacks for a number of years, had an affectionate husband, all the comforts of life, and knew of no cause whatever for the fits. Occasionally she would be quite well for months, and then have fits, she knew not why.

An attendant of the hysteric diathesis, which I mention by the way, as being too important to be altogether overlooked, is a remarkable liability to abortion. A considerable proportion of such as miscarry in the early months of pregnancy are of this constitution; and few child-bearing women, highly predisposed to hysteria, escape repeated abortions. I have said abortion in the early months, because in the later months miscarriage may occur from various local causes, as the death of the fœtus, or a slip in walking, irrespective of the constitution of the mother.

It is not my intention, as, indeed, it would be out of place, to enter on a fuller consideration of the ordinary forms of hysteria, familiar to most practitioners; but there is one form less known, and far from being well illustrated in any treatise I am acquainted with—I mean the voluntary hysteria. Dr. Cullen, it is true, expresses his belief that the hysteric affection can be, and often is, renewed at pleasure; and he has attempted, with much ingenuity, to explain how this happens, remarking that the occurrence is doubted, rather because it is difficult to explain how involuntary motions should thus be raised,

than from any weakness in the evidence for the fact. "Merely by recalling to my imagination," says he, "any piece of indiscretion which I thought I had committed, I have, in my chamber and alone, often blushed as warmly as when the indiscretion was committed. Many laugh by themselves in the same way; and still more can, by the imagination of mournful scenes, induce a flow of tears. None of these, however, are voluntary motions; but they serve to shew, that by teaching, as it were, the imagination the ideas that can excite such and such emotions and involuntary actions, we can in a manner render such emotions and actions subservient to the will." He then proceeds to relate a case to exemplify this reasoning:—"I knew a lady who was subject to violent hysterics, for which, for a long time, I could assign no reason, till at length, on mentioning by chance the name of a man from whom she had received the grossest injuries, she fell into a severe paroxysm; and then it appeared that they always came on when she thought of that person."

To me neither the reasoning nor the illustration appears conclusive. The instance of a person blushing in secret, on happening to recal a particular train of thought, is an example of emotion, which never becomes subservient to the will, as Dr. Cullen would have discovered had he retired into his chamber *on purpose* to make the experiment. The predetermined recollection of that indiscretion, the accidental recurrence of which, in the mind, had always hitherto called up a blush, would now, we may safely predict, have been followed by no such effect,—emotions of whatever kind, and however often renewed, being in their very nature, I apprehend, absolutely involuntary. The hysteric fits, too, of the lady, were as plainly involuntary. Had she, at the request of her physician, set herself to think of the obnoxious person, the very idea of whom excited fits, is it likely that by such a pre-arranged effort of the imagination she would have fallen into a paroxysm? I think not. The violent emotion hitherto excited by this idea, when obtruded on the mind *unbidden*, would now have given place to some mental state of a totally different kind—probably to curiosity. Another of Cullen's illustrations—the power of shedding tears at will—is very much more to his purpose; not, however, when it takes place as the effect of recalling to the memory some mournful scene, as he has stated, for then it is in its nature involuntary; but when it occurs as the effect of voluntary effort, which there is reason to believe many persons possess, almost at any time, the ability to make—a power in its nature similar to what is obtained over several of the other physical signs of emotion, by those dramatic actors who possess the true genius of their difficult art. The distinction I have here drawn ought not to be lost sight of. The power of assuming a doleful look, accompanied by a flow of tears, is one phenomenon; and the flow of tears, as the sign of a sorrowful emotion, is another and different phenomenon.

It is not easy to say what the power I allude to really is—the power of acting at will "the rueful look and gushing tear," nor do I think that every one is capable of acquiring it. The act itself, I imagine, is always preceded by a momentary general sensation or *thrill*, the faculty of causing which at pleasure, is the nearest approach that I can conceive to the power of falling at will into a true hysteric paroxysm. Perhaps the latter may not require a greater or very different kind of mental effort for its production than is required in the production of the former, for it is easy to believe that when once the earliest feeling which denotes the accession of the hysteric paroxysm, and is its antecedent, has taken place, the remaining train of symptoms will follow, not voluntarily but *necessarily*, according to the ordinary law of sequence, or, as it is commonly called, of morbid association. The remarkable case I shall now relate may help to exemplify this observation.

During my residence in Warrington, late one evening, August 22nd, 1821, I was taken to visit a person in the workhouse, who had been discovered in a field adjoining the town, apparently dying, in consequence of violation, and other injury inflicted on her, as she alleged, by two ruffians. I found a slender young woman, having a gipsy cast of countenance, lying on a bed, in what appeared a well-marked paroxysm of spasmodic hysteria. On coming out of the fit, she complained, in a feeble voice, of great pain in the limbs, in the throat, and on the left side of the abdomen. Applying her hand to the latter part,

she screamed and relapsed into a fit. Her look was quite ghastly, and expressive of great exhaustion. The surface of the body (notwithstanding the state of the weather, which was extremely sultry) was cold as a corpse; and the pulse was under sixty, and extremely feeble. An attempt to swallow a little spirit and water excited apparently a near approach to suffocation, during which the fluid was forcibly ejected from the mouth. She complained of pain in the pudenda; hinted that she was flooding, and that all her sufferings were owing to personal violence; but, on the plea (and it seemed very reasonable), of great exhaustion, she declined for the night a more specific examination. The same description of fits continued for three days and nights. On the evening of the 25th, that is, three days after her admission, she fell into a most violent paroxysm; and was thought by myself and others to be actually dying. Two men in the course of the day had been apprehended on suspicion of perpetrating the dreadful outrage she was supposed to have suffered; and on being confronted with her, she instantly identified one of them as her violator, who, in consequence, was sent to jail. Her tale, however, it now began to appear, did not hang well together. It was true, marks of violence were found on her person—on the arms, and particularly on the left side of the abdomen. On the inner surface of the labia pudendi, also, were two slight wounds, such as might have been inflicted by the finger or thumb nail: but not to spin my narrative too long, by the most convincing circumstantial evidence, and ultimately by her own confession, her story was discovered to be fiction, invented for the purpose of exciting charity, and that all her injuries were self-inflicted. She had fallen down in a fit in a field adjoining the public road, near the hall of a widow lady, noted for benevolence, where she was found, and, probably, contrary to her expectation, thence conveyed to the workhouse. In due time, Miss Mary Ann Sherratt, for that was the heroine's name, had to shift her quarters from the workhouse to Bridewell, where from the indulgent hands of her medical friends, she passed into those of the lawyers, and found herself a match even for the latter, for whenever they began to press her hard with unpleasant questions, she treated them with an hysteric paroxysm; not a sham fit, but one having every feature of actual hysteria. During these fits, I have repeatedly found the pupil immobile on the near approach of a lighted candle; and the effects on the surface of the body, the pulse and the countenance, were exactly such as warranted me in pronouncing the paroxysms *real*.

From Warrington Miss Sherratt was removed to Kirkdale, tried for imposture, convicted and imprisoned. On the expiration of her term—on the very day of her release, I believe, (I speak without possessing exact information) she wandered into Cheshire, and there fell not into a fit, but into labour. This time she chose her opportunity better, for great commiseration was excited, and she had presents of various kinds showered on her. An accoucheur was likewise summoned, whose obstetric examination she contrived to parry throughout the ensuing night; but in the morning, before she could escape, it was discovered that she was not in labour, nor to all appearance, even pregnant. Again was she conveyed to jail at Knutsford, tried and punished. A number of years elapsed before I heard further tidings of this singular person. However, in glancing over the columns of a London paper, I chanced to light on a notice to this effect:—That a young woman of the name of Sherratt, who some years ago played a variety of strange tricks at Warrington, had absconded from the Penitentiary, carrying with her property to the value, if I rightly remember, of 40*l*. It appears that before finding shelter in the Penitentiary, she had contrived to fall into a fit in the street so opportunely as to attract the notice of Mr. Alderman Wood, who took compassion on her, and had the influence to obtain her admission where I have stated. There Miss Sherratt soon became a great favourite with the ladies who superintended the institution; and having a wonderful turn for repeating from memory portions of scripture, (a turn I well recollect her possessing when under my care), she was looked on, up to the moment of her elopement, as a most exemplary and hopeful penitent. More of her story I do not know. I have never, however, seen reason to change the opinion I originally formed, that the fits were truly hysteric; and that she could fall into a paroxysm by a mere act of the will.

If not intermediate between involun-

tary and voluntary hysteria, yet differing a shade from the ordinary character of the former, is hysteria from imitation—a variety characterized by the fit supervening on the patient witnessing an hysteric paroxysm in another. We should, *a priori*, imagine that the predisposition must be strongly marked indeed, in those who fall into hysterics from this cause. But it is doubtful if such is the case; since sometimes on one in a ward falling into a fit, the whole or greater part of the inmates immediately follow the example. A case of dysphagia in a female in Guy's Hospital, Dr. Bright informs us, required the employment of the probang; but no sooner was the instrument introduced than the patient fell into hysterics, "which was followed immediately by hysteria in several females in the ward." Instances of this description are often met with, and curiously illustrate the wonderful physical influence which one human being, under particular circumstances, exercises on another. Nevertheless, it would seem to have been reserved for the modern advocates of animal magnetism to perfect us in this kind of lore, of which kings, with their curative touch, were the first great professors; while the credulity of the former has taught us that the world may increase faster in knowledge than in wisdom.

The power of throwing off an hysteric seizure, by a voluntary effort, is a remarkable circumstance, and by no means rare. Hysteric patients, in hospitals, are said to recover more speedily under the care of certain nurses than under others; owing solely to greater personal control. The following case is instructive. Happening to be in attendance on a lady, distressingly affected with hysteric sighing, I had occasion to converse with another lady, a particular friend of the patient, respecting the somewhat singular nature of the complaint; when she addressed me in these or similar words. "Miss A. might, if she would, do much by her own effort for the cure of this sighing. When I was very young I exposed myself to a silly disappointment, and was taken with the same kind of sobbing; the moment my mother, who possessed both sense and firmness, perceived the slightest signs of an attack, she made me get my bonnet, and drove me, forthwith, out of the house, into the street. This acted more effectually than Miss A.'s large doses of æther; for the fear of being noticed sighing in the street, effectually, for the time, overcame the tendency. After a while my mother's perseverance and my own efforts wrought a complete cure." In such instances as this, the paroxysm probably originates in no act or even consent of the will, and yet steals on with a force so gentle as admits of its being effectually resisted, if the patient is determined, or compelled, to make the attempt.

The medical treatment of hysteria, having nothing new to offer, it is not my intention even so much as to touch upon; and I hasten to conclude by a brief enumeration of those points which it has been my wish to bring especially under notice:—

1st. Hysteria manifests itself in various forms, and several of these again split into many varieties; illustrating the remark of Sydenham, that in diversity of feature this disease may be compared to the shapes of Proteus, and the colours of the chameleon. Hence it does not easily admit of definition; or rather, to every definition there must be exceptions so numerous as to render it altogether worthless for practical purposes

2nd. It is an error to regard hysteria as exclusively a symptom of uterine derangement, or of spinal irritation; or an affection of the brain; or as being solely a disease of females.

3rd. The peculiar nature of the causes, as well as the symptoms of hysteria, in all its forms and varieties, points to the nervous system as the primary seat of the disease; and it would appear, further, that not always the whole of that system is affected, but rather, sometimes, a particular part thereof—an inference illustrated and strengthened by sound analogy.

4th. We have reason to believe that there is *as absolutely* an hysteric constitution, or congenital predisposition to hysteria, as that there is a scrofulous constitution, or congenital predisposition to scrofula; and consequently that none are liable to hysteria but only such as possess this constitution.

5th. The hysteric constitution is characterized by irritability *sui generis* of the nervous system as a whole, or sometimes more particularly as connected with certain organs; and that although this condition cannot be *origi-*

nated by modes of living, and other external circumstances, it may be greatly aggravated by them.

6th. There is nothing whatever more mysterious in hysteria than in any other complaint—scrofula, for example. The difference consists in hysteria being more complex and obscure, that is to say, more difficult of observation, than the other; and this is, doubtless, an important difference. But, when observation and reason have done their utmost, all we can ever hope to know of hysteria, or of any other disease, are its *causes*, its *seat*, and its *phenomena*. If we imagine that we are capable of attaining to knowledge more recondite than this, we deceive ourselves, and overlook the first principles of medical inquiry.

7th. The mind exercises a remarkable power over the phenomena of hysteria; in rare instances causing paroxysms of the spasmodic form of the disease by a mere act of volition, and, in other cases, sufficing to effect, or powerfully to aid in effecting, a cure;—facts which seem to prove that hysteria is as purely and unequivocally an affection of the nervous substance, as perhaps any disease which could be named.

OBSERVATIONS ON THE PATHOLOGY OF NERVES.

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[Continued from page 479.]

2.—*All the branches proceeding from a common trunk, will have a similar disturbance of their function from the same injurious impression.*

This is unquestionably true, as a general proposition; but as there are some exceptions to the rule, it must be taken *cum grano salis*. By the terms "similar disturbance" is here meant a resemblance in kind, rather than sameness in degree. If, for instance, a nerve of sensation be excited, as some of those branches of the fifth which proceed from its ganglionic root, there will be morbid sensibility—neuralgia—in all the parts of the surface supplied by those branches, of which innumerable instances are upon record. If it be a nerve which ministers exclusively to motion, that is excited, spasm, convulsive movement, will be the result; if a compound nerve, there will be commonly the combination of suffering from neuralgia, with convulsive movement; and the excited state will be sometimes conveyed from the nerve originally affected to others in its vicinity, or with which they may be associated by nervous communication or interchange of filaments. So, decayed teeth have, by irritating and inflaming the nerves of the gums, occasioned painful affections and muscular spasms, not only of the face, from the extension of diseased action to the sensitive branches of the fifth, and the portio dura of the seventh, but also in those muscles of the neck, and even upper part of the back, which are supplied by the respiratory system of nerves. Of this the extremely interesting case recorded by Mr. Mitchell* affords a striking example.

A similar extension of diseased action was observed in a case of medullary tumor of the ham, related by Mr. Travers*. In this case, the pain was at first confined to those parts upon which the long cutaneous branch of the peronæal nerve is distributed, as "the toes and outer side of the foot," but afterwards the loin upon that side, together with the sciatic and crural nerves, partook of the neuralgic affection, probably from the extentsion of inflammation upwards. It is generally the same where similar nerves are paralysed: all the parts which derive their energy from the same trunks will lose at once their sensibility and muscular power; but this seldom extends upwards above the part affected. The ischiatic nerve, compressed by sitting, or by an aneurismal tumor, is attended by a diminution or total loss of sensibility, and the power of muscular action, in all the parts which it supplies. There is not increased sensibility in one part of its course, with diminished sensibility in another; neither is there convulsive movement in one part of its course, with defective muscular power in another. Be the state that of muscular spasm upon the one hand, or paralysis upon the other, acute pain upon the one hand, or defective sensibility on the other, the affection is the same throughout the whole course of the

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* Med.-Chir. Trans. iv.
† Ibid. xvii.

nerve, and generally through all the ramifications which proceed from the same trunk. Haller has stated this with his usual clearness and precision*; and subsequent observations have confirmed the accuracy of his opinions.

But although, in a compound nerve, sensation and motion are commonly affected in the same way,—although they generally err together, either by excess or defect,—yet it is not always so. Motion may be impaired and the sensibility retained, or the converse of the proposition may be true. A case, which some years since I communicated to Sir Charles Bell, and which he has done me the honour to insert in the appendix to his work upon the nervous system, was an interesting example of both these conditions. Upon one side this patient had defective power of motion, without any diminution of sensibility, but, on the contrary, a sense of heat; upon the other she had impaired sensibility, without any diminution of muscular power. With the arm of this side she could readily hold her child; but it required the constant direction of the eye, as well as a distinct effort of the mind, to keep the arm from gradually loosening its hold, and allowing the child to fall. Indeed, these two conditions of nerves in the same limb may even be in an inverted proportion to each other, as in an instance communicated by Sir Charles Bell to Dr. Cooke, who has given an outline of it in his work upon palsy. "Pain, of a most agonizing kind, periodical, and alternating, had confined the patient for two years, and had quite subduced a powerful frame, while the muscles supplied with nervous energy from the same source were become paralytic and shrunk." These facts are inexplicable, according to the ancient notion that the different offices of sensation and of muscular activity, to which a given nervous cord ministered, were the result merely of varied degrees of energy or action in some filaments, but are intelligible upon the principle so amply established and aptly illustrated by modern physiologists, that what Mr. Abernethy called "a packet of nerves," though united in a single cord, is a compound of fibrils of different function, some contributing to sensation, others to muscular activity, but maintaining throughout their whole course a distinctness of texture, as of office, and each, probably, circumscribed, and separated from the other by its own tunic.

This principle, of which it was left for the physiologists of our own time, especially Sir Charles Bell and Magendie, to prosecute the development, as well as to supply us with copious proofs and illustrations, did not altogether escape some medical writers of an early date. Even Galen was aware that a nerve, although to appearance a single cord, still consisted of many nerves contained in a single sheath*; that some of these were distributed to the muscles, and were for the purpose of motion, whilst others went onwards to the skin, for the purpose of sensation†; and that some of these nerves might have their function impaired, to the exclusion of others: but he retained the doctrine prevalent at his time, that, after all, muscular motion required a stronger exertion of nervous energy, while a slighter would suffice for sensation‡; an opinion which was entertained also by Haller§. Willis, too, had more than a glimpse of the modern views with regard to the diverse functions of the several filaments of which a nervous cord consists, and applies them particularly to the recurrent, with respect to which, he has this remarkable passage:—"The returning nerve, although it seems a branch sent forth from the trunk of the wandering pair, yet, for better conduct's sake, it is contained under the same coat with the rest of the wandering pair‖." And again: "it is very likely that of the fibres which are complicated together in the trunk of the wandering pair, one is distributed to the returning nerve, ano-

* Irritato nervo multis musculis communi; totive artui, omnesiei musculi convellunter qui ab eo nervo nervos habent sub sede irritationis ortos. —Elem. Phys. iv. 325.

Siplures ad musculos unus nervus distribuitur omnes ii musculi convelluntur qui eo ab nervo ramos habent quem irritavimus.—Ibid. 322.

* Ab origine multi sunt concreti et communibus involucris contenti.—Galen, De Locis Affectis, lib. i. cap. 6.

† Si itaque musculorum nervos affici contingat motus digitorum perit; si vero eos qui ad cutem perveniunt tangendi sensus corumpitur: sed ubi tota resolvuntur membra, cum videlicet commune principium affectum est simul et sensus et motus pereunt.—Galen, loc. cit.

‡ Equidem id ipsum dicebam, quod priores medici dicere solebant, quod scilicet sensus in patiendo, motus vero in faciendo aliquid, fit: quapropter ut quis moveatnr opus est robore; sed ut sentiat vel minima facultas sufficit. Ibid.

§ Plus antem ad motum quam ad sensum requiri multa ostendunt. — Elem. Phys. vol. iv. p. 299.

‖ Description and Uses of the Nerves, p. 147.

ther to the præcordia, a third to the lungs, and, lastly, another to the ventricle; all which, although they have communications among themselves, and, for the sake of a better conduct, are gathered together into one, yet they are distinct from their very original, and constitute divers passages for the animal spirits *." Van Swieten also considered it as a point well known amongst physiologists, that some nerves minister to sensation, others to muscular motion; and that, although they are perfectly distinct at their origin within the cranium, yet that, collected into one common trunk, they proceed together to their several destinations: the nerves of motion, therefore, might have their function impaired, whilst the nerves of sensation might either altogether escape or be only slightly affected; or the converse might be true †.

It appears, then, and it is explained by this view of the intimate structure of a nerve, that the filaments of sensation may be affected, whilst those of muscular movement are unimpaired; or the latter may have their function disturbed, whilst the former are uninfluenced; or their morbid conditions may be incommensurate with each other; or the sentient and motor filaments may even be in opposite states in the same nerve. The late Mr. Shaw, in considering "why sensation should remain entire in a limb when all voluntary power over the action of its muscles is lost, or why muscular power should remain when feeling is gone," thinks "it is not too much to suppose that one origin of a nerve may be affected whilst the other remains entire;" and arrives at this practical conclusion: "if only one set of functions of a spinal nerve be deficient, we should apply our remedies to that part of the system from which the nerve arises; but if both functions are impaired, we must then direct our inquiries to the state of the nerve in the whole course, from its origin to its distribution, as the loss of power is probably owing to some affection of a part of the nerve after the two sets of filaments by which it arises are united together *." The case to which I have before adverted, in which these two opposite conditions existed on different sides of the body, would seem to give countenance both to the principle and practice of my late lamented friend; but they are far from universally applicable. In the case, before alluded to, in Dr. Cooke's work, although the sentient filaments were in a state of excitement, the motor filaments paralysed, there was no suspicion of any affection of the *roots* of the nerves. The trunks were found tender, and acutely sensible to the slightest pressure, and the case was cured principally "by repeated purging, and the application of leeches along the course of the nerves." In the case also related by Mr. Denmark †, to which I shall have occasion hereafter more particularly to advert, there were violent pains, without, however, muscular spasms, although the symptoms arose from a wound followed by inflammation of the radial nerve in its course; and in many cases of ischias, where it depends upon some inflammatory condition of the nerve, as in the examples related by Cotugno, Martinet, and others, the pain is often considerable, and shews itself in different parts of the limb, but the muscles often altogether escape. These are glaring exceptions to the pathological principle and to the "rule of practice" to which I have already alluded, and point decidedly to the conclusion that even "after the two sets of filaments by which it arises are united together," one function of a nerve may be affected, to the exclusion of the other, by an impression made upon its trunk; but there is nothing in all this which is calculated in the smallest degree to discountenance the statement, that the condition of a nerve will be identical throughout its whole course, whatsoever character the morbid affection may assume; whether it be that of excitement, an exaltation of function upon the one hand, or defective energy upon the other.

3. *The morbid affections of nerves resolve themselves into those of excitement and those of defective energy.*

This general principle is so well established and so familiarly known, that it will perhaps be readily conceded

* Ibid. p. 151.

† Notum est physiologicis, nervos quosdam sensui, alios motui servire, qui distinctissimi licet sint in sua origine intra encephalum, tamen in truncos majores nervorum collecti ad partes corporis una deferentur. Potest ergo impediri functio nervorum moventium, dum nervi sentientes adhuc illibati sunt vel minus læsi; et vicissim.—Comm. in Aph. Boerhav. §. 1057.

* Med. Chir. Tr. vol. xii. p. 149.

† Med. Chir. Tr. vol. v.

without proof or illustration. The only modification of the statement, requiring even the slightest notice, is this—that in the nerves which supply the organs of the external senses, their function may not only be excessive or defective, but also vitiated or depraved. The eye may be unable to distinguish colours, though this may arise also from some imperfection in the perceptive faculty; the tongue may fail to recognize the true flavour of sapid particles; the ear may be assailed with particular sounds, without the corresponding external impressions; and the touch may be variously perverted. The causes of these disturbed states of function in nerves which minister to the external senses, have hitherto been little investigated, and have eluded the discovery of pathologists. They have been recorded as insulated facts, without further arrangement than that founded upon the organ affected, and without any connecting link in the form of a general law or principle by which they may be associated. But even if I possessed materials for the prosecution of the very interesting, though difficult, inquiry into the pathological history of these perversions of the external senses, it would be unnecessary for me to enter upon a subject which is not even remotely connected with the objects of my present investigation.

Excitement of a nerve, where it exists, will be recognized by the occurrence of pain, or muscular spasms, or the combination of the two, according as the nerve is one devoted to the purposes of sensation, or of motion, or of both. The branches derived from the ganglionic root of the fifth pair, which are distributed upon the surface of the face, are nerves exclusively of sensation, and morbid excitement in these branches occasions the agonizing sufferings called neuralgic, and familiarly known as "tic douloureux," or "the tic." The portio dura of the seventh pair is a nerve exclusively of motion, and, when in a state of excitement, produces excessive and anormal movements of the muscles which it supplies. Excitement of a voluntary, compound, or symmetrical nerve, as in those gangliform enlargements which not unfrequently form on the extremities of the nerves in an amputated limb, will occasion at once violent neuralgic paroxysms, referred to the former remote distribution of the nerve affected, and violent "convulsive jumping" of the limb.

The pain of a morbidly excited nerve, commonly called neuralgic, or neuralgia, is of a peculiar kind. It is sometimes periodical, much more frequently merely paroxysmal. It recurs at irregular periods, and from very slight causes, or occasionally from none that we can trace. It is also fearfully severe, and is commonly attended with local determination of blood to the part, with a distressing sense of heat; if situated in or near a secerning surface, with an increase of secretion from the part, and a proneness to inflame from slight causes.

Of its intermitting character, Mr. Swan has offered an explanation which is, perhaps, as near an approximation to the truth as any that has hitherto been adduced. "It may be," he says, "that a nerve cannot at first bear a diseased action without rest, any more than it can a healthy one; and therefore the diseased action, after a certain period, ceases to make any impression; but after this rest, the nerve acquires fresh powers, and is again fitted for action *." There is in this explanation some confusion, arising from a want of discrimination between the action and the producing cause. "The diseased action" is the painful paroxysm, not "the impression" which causes it. The author's meaning is probably this—that nerves, like other organs and faculties, in a diseased state, are fatigued and exhausted by their vehement exertion; that they cease to act; that after resting for a while they again recover their power, when, in consequence of their morbid state, their renewed exertion is irregular and violent. But this, to me, is not altogether satisfactory. It appears to be rather a statement of fact than of explanation; and amounts, after all, to little more than that the attacks of neuralgia are intermitting. The opinion of Bichat upon this point appears to have been somewhat similar; though this distinguished anatomist presents it rather in the garb of a matter of fact than an explanation, and applies it as a general law or attribute of the nervous system, in a state of health rather than disease †. Were it not for this peculiar

* On Diseases and Injuries of Nerves, p. 13.

† Dans les experiences, la sensibilité animale du nerf semble s'épuiser peu à peu, et cesser enfin. Si on cesse d'exciter le nerf pendant une heure ou deux, la sensibilité se renouvelle avec beaucoup

attribute of neuralgia, life would more frequently fall a sacrifice to the disease; as it is, these pains may "quite subdue a powerful frame*," and, in some instances, "may wear out the patient's health, and destroy him at last†."

It might be expected that, where disease exists in those parts of the animal body upon which sensibility and sensation depend, the pain would be inordinately severe; and no stronger proofs that such is the case are required, than the physical and articulate expressions of agony which the most patient sufferers from this malady present to us. Nothing can exceed the distress depicted upon the countenance during a paroxysm, and the language is by no means extravagant, or hyperbolical, when patients designate their sufferings as acute and severe beyond endurance—as excruciating, agonizing, fearful, horrible; expressions, all of which I have again and again heard from individuals labouring under the tic douloureux.

Neuralgic affections are also frequently attended with local determinations of blood to the part, with, probably, increase of arterial action. That nerves do in reality influence the capillary circulation, as the minute extremities of the arterial tubes are often denominated, is a point which has been elaborately, but somewhat diffusely, argued by Mr. Swan, who decides in the affirmative; and there is, in fact, no dearth of evidence of the effect of nervous influence, even in the most healthy condition of the nervous system, in increasing the activity of the arterial circulation. A hint, or an indelicate allusion, which affects the sensitive mind of a delicate female, calls a blush upon the cheek, and is followed by a sense of heat. She is conscious of the change, and literally feels that she blushes. The consciousness of this adds to her embarrassment; the action of the vessels of the face and neck is still further increased,—"she blushes up to the eyes," and her whole neck is suffused with redness; her cheek and neck also burn with heat; and at length, upon some occasions, the vessels unload themselves by pouring out a partial, though often a copious, perspiration. In these cases the moral impression must be upon the nerves; and what is here observed in a state of health, is also manifest in a diseased condition. The existence of such local determination of blood to parts which are the subjects of painful affections of the nerves, has been established by the concurrent testimony of most writers upon these diseases; but by none has it been so explicitly stated as by Mr. Earle, in his valuable and instructive paper, "On the Influence of the Nervous System in regulating Animal Heat." He exemplifies it in an instance of a painful condition of the nerves of the forehead and face, in which "there was a well-defined red line in the whole course of the supra-orbitary nerve, accompanied with so much heat as readily to evaporate any cold water which was applied." And he further thus sums up the result of his extensive experience:—"In no case, perhaps, is the effect of a local determination of blood more marked than in tic douloureux. In every instance of this distressing malady which has fallen under my observation, during each paroxysm of pain there was an evident increased flow of blood to the part, accompanied with an increase of heat, more or less perceptible *."

The result of this local determination of blood to a part is a corresponding increase of temperature. This is incidently noticed by Mr. Swan, but minutely considered by Mr. Earle, who ascribes it to some direct influence of the nervous system unconnected with the arterial circulation. He states this explicitly with respect to the coldness from defective nervous energy, in which "the circulation of the blood has been apparently *unaltered* either in degree or quantity;" and thus countenances by the argument *e converso*, that increased nervous energy causes an increase of temperature also by some direct influence upon the evolution of animal heat, unconnected with the arterial circulation; or if the two have any relation to each other, this eminent surgeon is disposed to think that "the principle of vital heat is the result of the action of the arterious blood on the nerves," rather than of the action of the nerves upon the capillary circulation. With the utmost deference, however, to one who deserves so well of his profession, I may be permitted to doubt the accuracy

d'énergie, lorsqu'on vient à le tirailler de nouveau.—Anatomie Générale, tom. i. p. 163.

* Bell, in Cooke on Palsy, p. 98.

† Bell's Operative Surgery, vol. ii. p. 330.

* Med.-Chir. Trans. vii. 187.

of this opinion; and this without casting the slightest degree of discredit upon the interesting experiments of Sir B. Brodie and Dr. Davy, whose accuracy and fidelity are unquestionable. All chemists agree that the capacity for heat of arterial blood is greater than that of venous blood; and the inference is obvious, that in the transition from arterial blood to its venous state, which takes place in the capillary circulation, the capacity for caloric is diminished, and latent heat therefore evolved. In the experiments of Mr. Brodie, no disengagement of heat took place during artificial respiration, because the functions of secretion, and more especially of assimilation, were deranged or suspended in consequence of the annihilation of that nervous energy which is required for these operations of the economy. It is in evidence, then, that in cases of morbid excitement of nerves, there is "a local increased action of the blood-vessels*," "an increased flow of blood to the part†," proved by the well-defined red line in the whole course of the nerves affected; there is "*fièvre au moins locale*‡." It is further known, that it is in consequence of the change of capacity for caloric, which takes place at the moment of the transition from venous to arterial blood in the capillary circulation, that animal heat is extricated; and it is quite intelligible, therefore, how an increase of the arterial circulation should evolve an additional quantity of animal heat. But it is neither proved nor attempted to be explained how an increase of nervous influence, unconnected with the circulation, should produce that effect.

Another consequence of the increased flow of blood to the part is some degree of swelling, with frequently increase of secretion. When the ophthalmic branch of the fifth pair is the seat of neuralgia, during the paroxysm, tears will flow in abundance from the eye upon that side, the lachrymal gland deriving its nervous energy from that source. Mr. Swan has advanced, in proof of the existence of a local increased action of the blood-vessels, "the appearance of the parts to which the affected nerve is distributed, and frequently the increased secretion of saliva when the nerves distributed to these glands are implicated*;" and in the case of "severe nervous affection after a punctured wound of the finger," related by Mr. Wardrop†, the skin of the finger became "so acutely sensible, that she could not bear it to be touched; even the dread of any thing coming in contact with it would make not only the finger but *the whole hand flow with perspiration*."

[To be continued.]

* Swan, p. 12.
† Earle, supra.
‡ Descot sur les affections locales des nerfs, p. 198.

DECUSSATION OF THE POSTERIOR CEREBRAL COLUMNS.

[Communicated by Sir Charles Bell.]

Brook-Street, Jan. 3, 1835.

Dear Sir,

Some time ago I had the base of the brain from Mr. Owen, for the purpose of investigation. I return you the same, having made a dissection to shew the posterior roots of the spinal nerves in their relation to the posterior column of the cerebrum.

In this preparation you will see the union, decussation, and divergence, of the two posterior columns, and the continuance of their filaments into the spinal nerves.

I hope you, or Mr. Owen, will be so good as to let the members of the College who visit you see it; and pray point out to them, that the descending processes of the cerebellum have nothing to do with this decussation. It is only by entertaining this mistake, that any one can be led to say that there is no union of the columns.

I wish to let my anatomical friends at home see these dissections, so that they may not, as on former occasions, withhold their assent until the observations are confirmed by foreign authorities.—I am, dear sir,

Yours truly,
Charles Bell.

To Mr. Cliff,
Senior Conservator of the Museum of the College of Surgeons.

* Swan, p. 11.
† Med.-Chir. Tr. viii. 247.

PUFFING OF THE *UNIVERSITY* HOSPITAL.

To the Editor of the Medical Gazette.

SIR,

I SHALL be much obliged by your inserting the following observations in your valuable pages, as they are the result of experience, and written with the intent of contradicting and exposing a stupid calumny in the last number of the Lancet.

The fabrication to which I allude is contained in a *notice* of the London University Hospital, which the writer recommends in no measured terms; while, doubtless from a love of justice, he then abuses all the other London hospitals.

The following passage I shall select, as it forms the pith of the falsehood, and I do not think it necessary to give any specimen of the abuse:—"At the Middlesex, St. George's, and other metropolitan institutions, the pupils have long been denied the opportunity of visiting patients, unless in the presence of one of the medical officers."

Now, did I not actually know that the plausible impudence of this artful deceiver had succeeded in some instances in misleading young students just arrived from the country, I should not have wasted either my time or my ink on the subject. Experience is ever our best guide; and medical students ought to be convinced only by their own eyes. I am myself a pupil of St. George's Hospital, and although I have regularly attended both its medical and surgical practice for a considerable period, yet I *never* met with the least obstruction in gaining admission to the wards whenever I wished; and when I visit the hospital, I constantly see the more diligent pupils questioning patients, although neither physician nor surgeon be present. This is a matter of fact, incontrovertible, and therefore requiring only to be stated.

I will now give you another case. A friend of mine, who is a pupil of the *London University Hospital*, wished to investigate a case; but on entering the ward for that purpose, he was civilly informed by the nurse that she had *express orders not to allow any one to examine cases, unless in the presence of the physician or surgeon.* Here, then, we have a very pretty editorial blunder. Mr. Wakley has actually accused others, in order to puff the London University Hospital, even when the said hospital is itself guilty of what he has *falsely imputed* to others.

I will venture to give Mr. Wakley a little advice. Let him refrain at present from writing any further puffs for the London University; and on his next visit to the establishment which he honours with his patronage, let him examine the branches as well as the root of that institution, that he may so frame his account of it as to have at least the semblance of writing to afford information, and not merely to serve a party purpose.

But I have yet another circumstance to mention, which I think will fully expose the absurdity of Wakley's puffing as regards the London University Hospital. I find on inquiry, that no pupil can ever hold the office of dresser, unless he has entered PERPETUAL to that hospital! This is liberality with a vengeance! Only think how the future mass of surgeons emanating from this not-to-be-equalled establishment will shine when endeavouring to put on a bandage!

A friend of mine asked my advice as to what hospital he should attend; he thought of the London University Hospital: but I told him, after duly considering the advantages *offered* to the medical student there, and comparing them with those which were *certain* in the other London hospitals, it seemed to me that the latter possessed very great advantages over the former—namely, a far greater variety of cases; more accidents of every kind; more operations; and though last, by no means least, both physicians and surgeons of far greater experience in their hospital duties.

I fear it may but too fairly be argued, from the uniformly boasting addresses delivered by the learned professors of the London University at the commencement of the medical session, that they themselves are favourers of the degrading system of puffing adopted towards them in the Lancet.

Now, sir, if the professors of the London University really deliver the most valuable lectures in the world, and their hospital, small as it is,

be the very best in the universe, they surely need not have recourse to this eternal puffing, but be content, as in other establishments, to rest upon their merits.

Hoping the contents of this budget may prove beneficial, I am, sir,

Your obedient servant,

A Pupil of St. George's Hospital.

January 6, 1835.

[The writer of the above has sent his name, as a guarantee for his accuracy: he also mentions, in explanation of his quoting the same portion of the *fabrication* which we gave last week, that he had not received the Gazette when he penned his letter.—Ed. Gaz.]

ANALYSES and NOTICES of BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'Alembert.

Aufsätze und Abhandlungen aus dem gebiete der Medicin, Chirurgie, und Staatsarzneikunde. Von Dr. J. N. Rust, &c. &c. Erster Band. Berlin, 1834. Schloss.

(Memoirs and Essays on subjects connected with Medicine, Surgery, and State Medicine.)

This is a selection from the numerous papers published by the author in various journals for the last twenty years. He has an aversion, he says, to posthumous works, and prefers gathering together his scattered property, and presenting it to the public in an authentic form, rather than to leave this to be done, perhaps injudiciously, by others hereafter. Much tact is displayed by Dr. Rust in the arrangement he has adopted; for he has contrived, by the skilful disposition of his materials, to construct quite a systematic work; and he is practical throughout. "Here," as he says himself, "the reader finds me wholly devoid of hesitation or reserve, just as I think and act at the bed-side of the patient."

The volume, we have no doubt, will be very acceptable to our surgical brethren, as the subjects treated in it chiefly belong to their department; but general medical readers will also be much interested with certain parts, such as the able paper on Animal Magnetism, the essay on the Influence of Diet, and the author's views on Clinical Instruction: in the latter we observe there is a full account of the organization of the hospitals of Berlin.

Wanderings in New South Wales, Batavia, Pedir Coast, Singapore, and China; being the Journal of a Naturalist in those Countries, during 1832, 1833, *and* 1834. By George Bennett, Esq. F.L.S. Fellow of the Royal College of Surgeons, &c.—2 vols.

Mr. Bennett is known to the readers of this journal as the author of various highly-interesting papers on natural history. The volumes before us do credit to his previous reputation, and evince a great degree of zealous perseverance in the pursuit of his favourite objects, as well as a clear and lively style in detailing the results. The volumes contain much general information on the state of New South Wales, and the other countries visited by the author; but it would be foreign to our legitimate calling to enter upon these, and we must content ourselves with recommending them to general perusal.

Some curious medical matters are scattered through the narrative, and these we shall cull from time to time as we can afford space.

MEDICAL GAZETTE.

Saturday, January 3, 1835.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

Cicero.

POISONING, AND ITS PROOFS AFTER A LENGTHENED INTERMENT.

We commit to our pages, in the present number, the whole of the medical evidence given at the late inquest at Bristol. The details, in our judgment, are unusually interesting and valuable. Nothing can be more satisfactory than the mode in which the proofs, pathological and chemical, were adduced;

and the facts of the case seem to have been as clearly established as they could be were the deceased only interred a few short weeks ago. *Fourteen months*, however, have elapsed since the poisoning was effected.

The first step of the investigation, —and that not the least important one— was conducted with the requisite caution and ability: the identity of the party disinterred was fully ascertained. The coffin, it was proved, had not been meddled with, from the time the undertaker screwed down the lid, until the same man unscrewed it again at the inquest; nor had the grave been disturbed. The body, though externally much decomposed, was yet to be recognized, by the stature, hair, teeth, and the *initials* worked on the stockings. Whether it be customary to bury in pauper coffins with stockings on the corpse, we know not; but it was surely a singular accident—shall we call it oversight?—in the present instance; as if nothing was to be left wanting to render the circumstances leading to detection complete. In short, the body disinterred was identified as that of a female aged about sixty, who had lodged with the person now accused of her murder. In the body, as we shall presently see, were found abundant proofs of poison. The general evidence tends to shew that the prisoner, against whom a verdict of wilful poisoning has been brought in, had shortly before the death of the old lady administered to her a basin of gruel; that certain symptoms, since recognized as those of poisoning, were observed; that the whole affair was more than suspicious; that there were motives to tempt to the crime, in the wealth that the deceased was possessed of; that wealth did seem suddenly and unaccountably to accrue to the prisoner after the death of her lodger;—all this, with much more of the same kind, was testified in the circumstantial and moral evidence. We merely mention these facts generally, as, in the few remarks we have to offer, we wish to confine ourselves wholly, if possible, to the points ascertained through the professional witnesses: we only look to the proofs adduced of violent death — of death effected by the ingestion of a particular poison. With the question, by what hand that poison was administered, we have nothing to do; being anxious simply, in the brief notice which we can give of the case, to set forth the services tendered in it by medical science, as the assistant of justice, in the exposure of crime.

The external examination of the body was, perhaps, as complete as was absolutely necessary. We suspect, however, that our French brethren would not have been content without taking a *sketch* of the *appearances* after a fourteen months' disinterment. Whether our friends in Bristol were equally on the alert, we cannot pretend to say; but we would suggest that, in the event of their not having been so, they should secure some graphic memorial of what they saw, while yet the impression is fresh upon their minds. In this country, unfortunately, little or nothing is known, from actual observation, of the changes effected on the human body after death. That adipocire is formed under certain circumstances, as in the present case, we are all aware; and our attention was first drawn to the fact by the French, many years ago: but how little else do we know of the effects of putrefaction, and how poor a figure would most of us make, were we to attempt, without foreign assistance, to determine, from an examination of the parts, how long any given body had lain in the earth! Being able to solve that problem, however, we should be possessed of another and most valuable element in proving the identity.

The methods of testing for arsenic have been so much simplified of late years, that there are few things in toxicology now more easy: the merest tyro in practical chemistry may readily become competent to detect the presence of the deleterious substance. Yet this must in no measure detract from the merit of Mr. Herapath, who was engaged in the Bristol inquest: he performed his task in a very superior and masterly manner, and so as, we doubt not, to carry conviction to all who witnessed his manipulations. On the supposition that the yellow matter found in the stomach contained sulphuret of arsenic, he tried the reduction process, in the first instance, upon a small portion of it, and speedily procured a metallic crust. To prove that this crust was the metal arsenic, he oxidized it, dissolved the oxide, and dividing the solution into two parts, obtained from one, by the ammoniacal sulphate of copper, the characteristic mineral—green precipitate; and from the other the bright yellow precipitate, by the addition of the ammoniacal nitrate of silver: finally, he precipitated sulphuret of arsenic by a stream of sulphuretted hydrogen gas. Thus, from one and the same portion of the contents of the stomach, the presence of arsenic was proved by no less than five conclusive indications. The *quantity* of the poison in the organic mixture no doubt favoured the facility with which the analysis was effected: but on the whole, the proceedings were, as we have said, masterly, and well calculated to show the remarkable advance made in toxicology in recent times. Had such a case as this occurred half a century ago, it is probable that the examination of the body would not have been even attempted; or if it were, the methods of analysis were so defective as to lead to no satisfactory result. In a learned treatise on Poisoning, published at Strasburg in 1781, we find the author gravely advising, that when a body has been interred for some time, and there is a well-founded suspicion that there is arsenic in it—in which case only should the imminent danger of infection be risked—either the whole body or a part of it should be burned, for the purpose of ascertaining the presence of the drug by its alliacious odour: a piece of advice, by the way, involving what are now well known to be two silly errors—the danger of infection in such cases, and the possibility of perceiving the garlic smell from *oxide* of arsenic burnt along with animal matter.

There is, however, one point connected with poisoning by arsenic, which this Bristol case will serve more particularly to illustrate; —we mean the alleged antiseptic property of the mineral. The state of the stomach and bowels of the deceased was, it appears, as perfect as if the parts had been but recently deposited in the grave; and it is said that the formation of adipocire in other parts of the body was owing to the same cause — the presence of the poison. But this latter assertion may safely be doubted: at least there is no sufficient reason for having recourse to an extraordinary explanation of the phenomena, when an ordinary one is so adequate and so obvious. Those parts converted into adipocire were *under water*, and thus exposed for a length of time to the influence usually efficacious in producing such a change.

But the fact of the preservation of the parts containing the poison, and perhaps of some of those adjacent, through the agency of the arsenic, is placed beyond a doubt by the observations made in this case; and it supports, we would add by the way, in a very remarkable manner, an inference made by Dr. Christison, in his Treatise on Poisons. "If, in a case of poisoning," says Dr. C., "the arsenic be *not discharged by vomiting*, and the patient

die soon, it will act as an antiseptic on the stomach at least, perhaps on the intestines also, while the rest of the body may decay in the usual manner." We have now, indeed, as it would seem, a superabundance of evidence on the subject; for the instances already on record, and noticed by the author just quoted with his usual perspicuity, had already assured us of the certainty of the fact. Our readers may be glad to see one or two of those instances, the first of which we extract the more willingly, as it offers a very striking parallel, in some of its leading particulars, with the case which forms the subject of the present remarks. About the year 1811, "a lady near Bayreuth died of five days' illness, under symptoms of violent general irritation of the alimentary canal. Some months afterwards, a variety of circumstances having raised a suspicion that she had been poisoned by her maid, a judicial investigation was set on foot, the consequence of which was, that the same woman came under suspicion of having also previously poisoned another lady and a gentleman, with whom she had been successively in service. The bodies of the three people were accordingly disinterred, one of them five months, another six months, and the third *fourteen months* after death. In all of them the external parts were not, properly speaking, putrid, but hard, cheesy, or adipocirous; in the two last, the stomach and intestines were so entire, as to allow of their being tied, taken out, cut up, and handled; and in one a sloughy spot was found in the region of the pylorus. Arsenic was detected in two of the bodies."

Another curious example of the same kind is afforded us in an experiment performed by Dr. Borges. A rabbit was killed with ten grains of arsenic, and its body buried for thirteen months in a very moist place. "At the end of this period it was found that the skin, muscles, cellular tissue, ligaments, and all the viscera, *except the alimentary canal*, had disappeared, without leaving a trace; but the alimentary canal, from the throat to the anus, along with the hair and the bare bones, was quite entire*."

Even in the unique seven years' case that occurred not long ago at Lyons†, there seems to have been no small indication of this same antiseptic property being at work; as if, we would almost say, by a providential arrangement to lead to the murderer's conviction. A woman had long been suspected of having poisoned her father, but for seven years nothing sufficiently tangible could be alleged against her, to warrant the interference of justice. At length it was thought expedient to disinter and examine the body; and the parts were found, whether from the nature of the soil, or the peculiar cause of death, in remarkably good preservation. The head, trunk, and muscles, it appears, maintained their natural position; but the thorax and abdomen had given way. Close by the spine, however, corresponding to the position of the stomach, was found a brownish soft mass, from which, by the appropriate application of tests, the medico-legal examiners, MM. Ozanam and Ide, procured ample evidence of the presence of arsenic.

We intended to have added a few words on the morbid appearances in the case at Bristol; but, in truth, Dr. Riley's evidence is so copious, and the observations elicited from him by the Coroner and Counsel so much to the point, that we should only repeat, and perhaps less interestingly, what the reader will find fully set forth in a subsequent page. The whole investigation, indeed, has been highly creditable to our Bristol brethren; the case will, we

* Christison, p. 316, from *Bernt's* Beiträge, iv. 219.

† See this journal, vol. v. page 411.

doubt not, be cited ere long in every part of the globe where medical science is cultivated, and be frequently referred to both at home and abroad, as at once an example of the great importance of medico-legal research, and an illustration of several curious facts connected with the animal economy.

SUPPLY OF SUBJECTS.

The supplies afforded to the anatomical schools have of late considerably increased, so that both teachers and pupils are now well provided. An investigation into the causes of the late deficiency has been conducted by some members of the Council of the College of Surgeons, with the concurrence of the government. The impression at first was similar to that expressed in the articles lately published in this journal; but we understand that the conclusion to which they have come, and which is likely to be acted upon, is, that while the Bill remains as it is, no change in the manner of working it can be made with any prospect of advantage. It is quite clear that the mortality both in London and Paris was unusually small during the last three months of 1834—a circumstance which in great measure explains the dearth of *subjects*.

WAKLEY AN M.P.!!

To the surprise even of those who were aware that St. Giles's and Saffron Hill are in the borough of Finsbury, but most of all, we believe, to the astonishment of that worthy himself, Mr. Wakley has been returned to Parliament! This singular and rather amusing event has obviously resulted from the palpable want of consistency displayed by the other candidates; a fault which we suppose no one can lay to the charge of the new member;—at least *we* have always found him the same. The utter nothingness of such men in the House of Commons has been proved by the fate of Hunt, Cobbett, and many others; yet indirectly some advantage may possibly accrue, for we presume even the ultra-conservatives will admit that there is a necessity for some reform in a profession which they see represented by Messrs. Hume, Whalley, and Wakley!

INQUEST AT BRISTOL,

ON THE BODY OF MRS. CLARA ANNE SMITH.

Charge of Murder by Poisoning—Report of the Professional and other Evidence.

The proceedings of this important inquest commenced on Wednesday, the 24th ult., and were continued, with the intermission of Christmas Day and Sunday, until Tuesday evening, the 30th, when the jury delivered in their verdict of Wilful murder against Mrs. Burdock, *alias* Wade.

On Friday the coroner transferred the scene of the inquest to the theatre of the Bristol Medical School, and the first witness examined on Saturday morning gave

Evidence regarding the Morbid Appearances.

Dr. Henry Riley stated that he went with Mr. Kelson and others to open the body of a female interred in St. Augustine's church-yard. On the coffin-plate, which was partially destroyed by rust, was written "Mrs. Smith," aged 60 odd years; the grave was much deeper than usual for so common a coffin, and there was no water at the bottom; the coffin was made of common elm, such as is used for burials of paupers, and was screwed down in the usual way. On the lid being removed by the undertaker, they saw the remains of a human being; there was some loose earth on the breast and abdomen, which had got in through a slit in the lid, and a considerable quantity of water, which covered part of the breast, the abdomen, legs, and arms; the upper surface of the face and neck were above the level of the water; the body had on a shroud, an under garment, a pair of stockings, marked with red thread C. S., and the remains of a cap could be traced on the head. The body clothes were slit down the centre, so as to throw the dirt which had fallen through the opening of the lid on either side; by these means the body was exposed to view; it was that of a thin person; the chest had not fallen in, and there was no appearance of its having been opened. Mr. Kelson and witness then opened the chest and abdomen, by cutting through the cartilages of the chest and ribs on either side of the sternum, continuing the incisions downwards; thus the chest and abdomen became fully exposed. They found that all the parts which were below the level of the water were turned into adipocire; the external surface of the stomach and intestines appeared of a pale bluish colour; there did not appear any traces of disease or inflammation of the peritoneal surface of the abdomen; he did not think that there was any water in the latter cavity until it flowed into the thorax,

and thence into the abdomen, at the time of opening; they next took out the whole of the intestinal canal from the œsophagus downwards, and placed the different parts in separate vessels; in separating the small intestines from the duodenum, they noticed a considerable quantity of a yellow substance covering the mucous membrane of the latter, and were surprised to find that the whole of this canal presented such an extraordinary degree of firmness, and was so slightly decomposed; it was as firm as that of persons who died in an ordinary way, and who have been dead but a few days; the liver had shrunk to a fourth or fifth of its natural size; it was not thicker than his hand; the pancreas presented nothing peculiar in its appearance; the lungs had collapsed, and were reduced to a fourth of their volume; they were of a dark colour, approaching blue or grey; he did not see any thing like tubercles in them, nor any thing peculiar with regard to the pleura, nor did he observe any adhesions; the heart was collapsed and shrunk, but there was no appearance of disease in it; the diaphragm was little changed, and perfect. Witness cut off the head, for the purpose of identity by the teeth. The stomach and alimentary canal were removed to the Medical School for examination; there were yellow spots in several parts of the peritoneum; they were of a bright yellow colour, identical with that alluded to as being seen on the mucous membrane of the duodenum; they were in the largest quantity on the stomach, and also visible on the upper part of the intestines, and were besides visible in one or two places on the mesentery; where the spots were seen outside, they were also traced internally, as extending through the whole substance of the intestines; the mucous membrane of the stomach was firm to an extraordinary degree, and there were no ulcerations upon it; the dark red colour it presented might either proceed from intense inflammation or from decomposition; he inclined, however, to the opinion that it was the former, otherwise the membrane could not have been so firm; the greater portion of the spots were near the pyloric extremity of the stomach; the yellow matter was spread over the whole mucous membrane of the stomach as well as the duodenum; it could be scraped off in large quantities, and especially from the stomach; the matter most resembled in colour sulphuret of arsenic, commonly called orpiment; he did not think that it arose from an infiltration of bile; the mucous membrane of the jejunum presented the same dark colour; it was equally firm with the other parts; traces of the yellow matter were also seen in this portion of the intestine; in the great intestine the mucous membrane was of a very dark red, it was extremely firm, and spotted of a dark slate colour, particularly so in the neighbourhood of its upper part of the near ilio-cœcal valve; it had no yellow spots or ulcerations; the appearances of this intestine were such as are commonly found in cases of chronic diarrhœa of long standing; the slight change it had undergone was as striking as that of the stomach; in the latter and duodenum he saw little else but this yellow substance; in the smaller intestines there was a small quantity of brownish fluid, something like cocoa. He attributed the firmness of the intestinal canal to some antiseptic substance, and sulphuret of arsenic was said to be so in a very great degree; he did not mean to say that there were no tubercles in the lungs, but merely that he did not see them; the dark slate colour of the mucous membrane of the intestinal canal is said by the French pathologists to indicate chronic inflammation.

Cross-examined by Mr. Payne (counsel for the defence).—A chronic inflammation would certainly occasion death, and it might have occasioned a griping pain in the side. Witness had not seen much of the effects of arsenic on the human body, that is, to the extent of death; the sulphuret has the same general effects as the white oxide of arsenic; the old opinion was that they did corrode, and the modern one that they do not; he was convinced that the yellow spots on the stomach penetrated from the inside to the outside; witness has never seen a person killed by taking arsenic; it was used in cases of cancer, and some others, as cutaneous diseases, fevers, &c.; it was never administered in this country as orpiment, but when combined with an alkali, and it was then called Fowler's solution. This was the first stomach poisoned to death by arsenic that he had seen; none but a rogue or a madman would administer arsenic in so large a quantity as had been found in this stomach by Mr. Herapath; if any medical man had done it, he would deserve to be hanged. In administering Fowler's solution they proceeded with the greatest care; if arsenic were exhibited, they would expect the appearances found in this old lady's stomach, and he felt as confident as that he sat there that her death was occasioned by arsenic; the grave in which she was interred was a deep one for so poor a coffin; in some cases graves were eight or nine feet deep, and from the number buried in them the last body did not probably lie more than two feet from the surface—a very unhealthy and abominable practice.

Dr. Riley was, in a subsequent part of the proceedings, recalled, when he de-

scribed the effects of Fowler's solution as distinguished from the orpiment that had been administered in this case; the effect of arsenic when taken in over-doses, would be an inflammation of the mucous membrane of the intestinal canal, accompanied with great emaciation and debility, loss of hair, and occasionally of the nails. He had heard the evidence of the girl, Allen, and his opinion was that the deceased had been labouring under a most violent ptyalism, because the membrane of her mouth had been stated to be swelled, ulcerated, and bled extremely; she spit blood, and her cheeks and lips were swelled; he was not aware that ptyalism was the result of an exhibition of arsenic; he did not mean that it would not produce ptyalism, but he had not seen it; he thought it most likely that the ptyalism was brought on by taking mercury; he did not doubt it the least in the world that arsenic produced death in the present instance. He never saw a case of death occasioned by arsenic in small doses, taken as Fowler's solution; has seen symptoms produced by it short of the loss of hair and nails, such as sickness and loss of appetite; as arsenic becomes oxidized, it is hurtful; the white oxide is used extensively to preserve birds.

Chemical Evidence.

William Herapath.—Is Lecturer on Chemistry and Chemical Toxicology at the Bristol Medical School; was applied to on Monday last, the 22d, to examine the body of the deceased; undertook to do so, and to analyse the contents of the stomach; was present during the whole of the time of the disinterment, and the taking out of the viscera in St. Augustine's Church-yard; received them from the hands of Dr. Riley and Mr. Kelson, the medical gentlemen employed; placed them separately in two basins, which had been carefully wiped clean by himself—the stomach and duodenum in one, and the intestinal canal in the other; the stomach was whole, there was no orifice, and no loss of any of its contents worth noticing; tied up the basins with their contents in a cloth, and gave them to a man to carry to the Medical School; never lost sight of him the whole way. The appearance of the body in the church-yard was such as to lead witness to believe that it had been under the influence of an antiseptic; the body was, generally speaking, rapidly passing to a state of animal soap, or adipocire; the stomach and intestinal canal were in an unusual state of preservation, so much so, in fact, that upon seeing the viscera opened, he exclaimed, "This looks like the effects of arsenic;" as it is a well-known fact that that poison has the effect of preserving the parts contiguous to it; and tends to assist the changing the other parts into adipocire. Upon receiving the parts, witness invited all those who were interested in the case to accompany him, as he intended to operate in public; the Solicitor, and three medical gentlemen employed by the accused, accompanied witness, with many others, to his own theatre, at the Medical School, where he put a new deal board on the lecturing table, and placed on it the stomach, which was still entire, with the exception of two small cuts which must have been made in taking it from the body; witness slit it open with the scissors, and found a great portion of it thickly covered with a yellow pasty matter, looking like wet clay; all the apparatus used by witness was either entirely new, or had been carefully cleaned by him previously. As he was strongly inclined to think this powder was sulphuret of arsenic, he proceeded to treat it as such; he separated a small portion of the yellow substance with the spatula, absorbed the moisture on blotting paper, and then dried it; witness mixed it with a certain proportion of carbonate of soda and charcoal, both well dried, and put the whole into a reducing tube, and immediately sublimed metallic arsenic; this metallic arsenic was made the subject of the other experiments: witness first heated it, allowing the air to enter the tube, and it became oxidized, and sublimed into a white crust; this formed the second test of the presence of arsenic. Witness then introduced two drops of water into the tube containing the white crust, and with heat dissolved it; these two drops were made the subjects of two experiments. Into one he put a minute portion of ammoniacal sulphate of copper, and immediately found the green precipitate of Scheele, or arsenite of copper; into the other drop he put a minute portion of the ammoniacal nitrate of silver, and the yellow precipitate of the arsenite of silver fell. He had thus four tests of the presence of arsenic; it only remained to be brought back to its original state by passing a stream of sulphuretted hydrogen through the arsenious acid; this he did, and obtained the beautiful yellow of the sulphuret of arsenic; he had gone through these experiments four different times, and all with the same results. He next attempted to discover what quantity of the yellow substance there was left in the stomach; there was nothing of any importance in the stomach besides; he inverted the stomach into water, and washed its internal surface; he allowed the yellow powder to subside, and filtered the fluid so as to separate the yellow matter; in doing so he found that certain portions adhered to the internal surface of the stomach, and in two spots an infiltration had taken place

into the substance of the stomach itself; the quantity collected could not be well separated from the filtering paper, on account of the animal matter; the nearest estimate by weighing, and counterpoising an equal sized piece of paper, gave seventeen grains as the weight of the substance and animal matter. To get rid of the animal matter he introduced (taking away four grains for the purpose of other experiments) the paper and its contents into a flask with nitric and muriatic acids, and boiled it till every thing was either decomposed or dissolved, except the fibres of the paper; and next filtered and extracted the whole of the fluid, and then precipitated the arsenic by means of sulphuretted hydrogen; the thirteen grains yielded witness four grains of sulphuret of arsenic. There are but two metals that will give the yellow precipitate with sulphuretted hydrogen; the one is cadmium, which is exceedingly rare, scarcely ever to be met with in this country; he had about half an ounce of it, which he should think is more than there is in all the kingdom besides; the other is the peroxide of tin, which is also scarce, and is not used at all as an article of commerce or medicine, and in this case could not possibly exist.—(Mr. H. then shewed to the jury the matter which had been taken from the stomach, and which had produced the yellow precipitate, or sulphuret of arsenic; and also specimens, in sealed tubes, of the action of all the other tests. The stomach itself was also exhibited, and the yellow spots were very apparent, and some of the yellow matter still adhered to its coats.)

By the Coroner.—He believed there is no well-authenticated case of how much sulphuret of arsenic will destroy life; the quantity will differ with the proportion of the materials used in manufacture; native orpiment is not so poisonous as the factitious; it is possible that it might have been swallowed in the form of white oxide, or arsenious acid; arsenic is in common called "white" or "yellow" arsenic, and would be sold by druggists under those names; white arsenic is chemically called arsenious acid, and yellow arsenic, sesquisulphuret of arsenic; they are both poisonous, but not equally so; white is the most poisonous; all compounds of arsenic are poisonous; the operation of each is nearly similar. He had never seen a stomach operated upon by arsenic before; should think the yellow spots were caused by the rapid operation of the arsenic suspended abruptly by death; if they had taken place after death, they would, in his opinion, have been as generally extended as the sulphuret itself; both sorts of arsenic are very cheap; he had not the slightest doubt of the nature of the poison found in the stomach; he could stake his existence on the fact of the presence of arsenic in the stomach and intestinal canal; cannot say in what state the arsenic was taken; the process of decomposition sometimes produces sulphuretted hydrogen, which would convert white arsenic into orpiment; that found in the stomach is orpiment; cannot positively say in this case whether sulphuretted hydrogen had been produced, because adipocire was formed, and the decomposition of the body did not proceed as is usual; he was certain arsenic could not have been introduced after death, as the stomach was whole when it came into his possession; witness's attention was first arrested by seeing a small drop of yellow matter ooze from the stomach; the great quantity of yellow substance in the stomach struck him at once that he should find a mineral poison. He observed no bile in the stomach; there was nothing of importance in the stomach; if there had been bile he must have seen it; he was certain there was no bile.

Cross-examined by Mr. Payne.—Sulphuretted hydrogen might enter into the stomach from other parts of the body, although there was no orifice; he thinks the yellow spots were produced during life; he had not seen many stomachs that had received poison; he had frequently the contents of stomachs sent to him to analyse; in the stomachs he had analysed he had never met with any arsenic; this is the first, and he hoped it would be the last; this matter in the paper and the tube are both from the stomach; it is the same as is sold in the shops for yellow arsenic; should think that the four grains he reserved, and what adhered to the coats of the stomach, with what he worked off, would yield 5½ or 6 grains of the pure sulphuret of arsenic from the stomach alone.

Mr. Kelson was then called, but stated that he was not aware that he could add any thing to Dr. Riley's evidence; it was so clear and ample.

Dr. J. A. Symonds, lecturer on Forensic Medicine at the Bristol Medical School, was present at the disinterment of the body of the deceased, and at the subsequent operations. His conviction was, that poison (sulphuret of arsenic) was in the stomach and intestines; he had never seen the body of a person who had died from arsenic before; the effects of an overdose of arsenic would be extreme purging. Hahnemann, a German physician, states that two grains of white oxide of arsenic will destroy the life of an adult; the smallest quantity, in an actual well-authenticated case, is four grains; it is recorded by Zittman. Professor Christison, the first authority in this country, says four and a half grains have killed, and

mentions the case. M. Guibourt, a French chemist, states the analysis of artificial orpiment to consist of 94 parts of arsenious acid and 6 of sulphur; this analysis is confirmed by Orfila; ordinarily a poisonous dose would operate in half or three-quarters of an hour; it varies with circumstances—it may operate much earlier.

[This was the whole of the medical evidence: we give the following extract from the testimony of the chief witness for the prosecution, as it serves to describe, in some measure, the symptoms attending the death of the deceased.]

Evidence regarding Symptoms.

Mary Allen, aged about 16, had been engaged to wait on Mrs. Smith. On the second night of her attendance, the deceased was ill, and drank a quantity of cold water. Mrs. Burdock came up, and asked how she felt herself, and if she would take gruel; to which deceased replied she was very poorly, but did not want any thing, and wished to be left alone. Mrs. Burdock added, "you had better take a drop of gruel; I will make you some, do you take it, there's a good soul." She then went down stairs, and in a quarter of an hour brought up some gruel in a very small half-pint blue basin; it was given to deceased in bed; her pains were dreadful, and she was very ill; the gruel was of a bad colour—of a reddish appearance; the deceased drank about half of it, and then placed the basin in a chair, whence it was removed by Mrs. Burdock; deceased spit thick blood into the chamber utensil, but did not cough or make any complaint. On Mrs. Burdock asking deceased how she felt herself, she said "go along, and leave me alone." The former then turned round to witness and laughed, and sat down at the table near witness, on which she asked her if she had not better fetch a doctor? Mrs. Burdock whispered, "No, she won't have a doctor—what! have a doctor to kill her; no!" Deceased was very ill, rolling about the bed; but after a short time she became quiet, having lifted herself up, and struck her head against the head-board. Mrs. Burdock went towards the deceased, saying, "well, I think she is going to sleep now; she is going to be quiet a bit; do you think I had better sit up, or not?" Witness said she had better, and soon after went to the bed-side, and looked at the deceased, observing to Mrs. Burdock she thought she was asleep, and they would not disturb her. On again going to the bed-side, and placing the back of her hand to deceased's cheek, she exclaimed, "La! she is dead." Mrs. Burdock said, "La! come and sit down; don't make thyself a fool; if thee do'st go there, she will grab hold of thee." Witness then lifted up a hand, and found that life was extinct; she called Mrs. Burdock to come and see if it were not the case, who, on ascertaining it to be so, exclaimed, "Lord, my God, she's dead! what shall I do to bury her?" The latter went down to inform her old servant, Mary Evans, of the fact, who answered, "Oh! she's dead, is she?" Hot water was then prepared to wash the body, in laying out which witness assisted. * * * * Witness thinks deceased must have died between twelve and one at night, and at the time when it was observed she lay so quiet; as the corpse was cold on being laid out. Deceased lay down about five minutes after taking the gruel, and in half an hour was taken very ill; she was not sick at all, but spit blood.

PATHOLOGICAL LECTURES,

BY

Professor Mayo, F.R.S. &c.

Surgeon to the Middlesex Hospital.

In the preceding lecture, I described the morbid alterations which are met with in the medullary and cineritious substances of the brain and spinal marrow, and in the pia mater, arachnoid, and dura mater; and I commenced the description of the symptoms produced by injury or diseases of these organs, and the exposition of the points of structure, upon which those symptoms may reasonably be supposed to depend. The symptoms of deranged function, which have their immediate source in the spinal cord and medulla oblongata, may be considered under nine heads.

1. The cerebral masses, when in certain states of disease or other lesion, are capable of communicating a paralysing influence, or palsy-shock, to the cord and medulla oblongata; the consequence of which is, that the nerves arising from these parts cease to minister to sense and voluntary motion. In the preceding lecture I have advanced facts which seem to establish this conclusion.

2. When one hemisphere only, either of the cerebrum or cerebellum, is affected, the palsy shock thence produced is transmitted through the decussating fasciculi of the anterior pyramid of that side, to the opposite side of the spinal marrow at its junction with the medulla oblongata; and from this point its influence may extend either downwards to the spinal nerves, or upwards to the lower cerebral nerves, or simultaneously in both directions. The ar-

gument to establish these points is to be found in the preceding lecture.

3. All the parts of the central organs of the nervous system, in vertebral animals, depend, for their participation in the functions of consciousness, upon their physical continuity with the medulla oblongata. Applying this principle to the study of lesions of the spinal marrow, it becomes intelligible how rupture of the spinal cord, or pressure such as to crush its substance at any part, are causes sufficient to produce and to explain the extinction of sensation and voluntary motion, which is observed to occur in such cases, in all the parts supplied with nerves from the portion of the cord below the seat of injury.

4. The spinal cord contains as many integral segments, as there are pairs of nerves arising from it. These segments reciprocally influence each other, and are, to a certain extent, capable of co-operation even when the transmission of impulses from the brain is rendered impossible, and (which is more surprising) when the influence of the medulla oblongata is excluded*. These segments are, nevertheless, essentially independent of each other. The destruction of one or more of them does not interfere with the powers of those which are left, even when the destroyed ones intervene between the latter and the medulla oblongata. Softening of the interior of the cervical part of the spinal cord, may thus be attended with palsy or contraction of the arms, while sense and voluntary motion remain unimpaired in the legs. One condition, however, is requisite to enable the part of the cord below the disease to preserve its functions. A certain quantity of sound, or but slightly altered, nervous substance must extend across or through the diseased part, to maintain the communication between the medulla oblongata and the lower undiseased portion of the cord.

5. Palsy may be complete or incomplete, sudden or gradual in its progress. When its progress is gradual, its first invasion is manifested at the remotest part of the limb affected; in the upper extremity, for instance, it attacks first the hand, then the fore-arm, then the upper arm. This phenomenon admits of the following explanation:—I have shewn that the palsy-stroke is carried through the decussating fasciculi of the anterior pyramid to the tracts of the spinal cord and medulla oblongata, in which the nerves originate. Now when the palsy-shock is not forcible enough to overwhelm completely sense and motion, it operates to the extent only of enfeebling those tracts, which are the sources of the motor and sentient nerves. To follow the effect of this enfeebling cause upon the origins of the motor nerves first:—the source of the voluntary impulse, by the hypothesis, is in this case not extinguished, but weakened; it is therefore, when energizing, still capable of throwing excitement upon the muscles, only less of it than before. That lesser quantity of excitement may be enough to fill (to use a figurative expression) a short nerve, but not enough to fill or to stimulate sufficiently, or in the same degree, a long nerve. The palsy has struck the source of motion; the will energizing through that stricken source can determine a small force of excitement only through the nerves. I suppose, then, that a long nerve cannot be excited by that diminished quantity of nervous influence thrown into it, which still is enough to sustain the function of a shorter nerve. The same hypothesis, *mutatis mutandis*, will account for the commencement of anæsthesia occurring in the hand, or in the foot.

6. The failure of the will to excite the muscles in such cases, is properly termed *paralysis*, or *palsy*; the failure of sensation is properly termed *anæsthesia*. When the spinal cord is completely divided, palsy and anæsthesia simultaneously occur in the parts supplied with nerves given off below the division. This case is termed *paraplegia*. But the consequence of lesser injuries, appear, at first sight, to be capricious; sometimes anæsthesia occurs alone, sometimes palsy; sometimes anæsthesia of one side, conjoined with palsy of the other. The key to these varied phenomena is to be found in Magendie's discovery that the anterior fasciculi of the spinal cord, with the nerves proceeding from them, belong to motion; the posterior fasciculi, with the nerves proceeding from them, to sensation.

7. It has not as yet been satisfactorily explained why, as a consequence of disease of the brain, palsy is much more frequent than anæsthesia; why, when the two exist combined, the palsy is commonly greater in degree than the anæsthesia; why, if the patient recovers, the part stricken regains its sensibility faster than its power of motion. Are we to suppose that this difference is in the nerve, or in the organ in which it rises? Is the organ which gives origin to a sentient nerve, less easily stricken—has it more resistance to the depressing shock,—than the organ which gives origin to a voluntary nerve? or has the sentient nerve an easier office, and one which it therefore performs under greater disease, than a voluntary nerve its own? The following facts render the first hypothesis the most probable.

* The reader to whom the physiological principles assumed in these lectures may be new, will find an exposition of them in my Outlines of Physiology.

At the time that I was engaged in the experiments through which I discovered that the facial branches of the fifth are for sensation only, and those of the seventh for each kind of motion, I ascertained the ratio of their functional restoration after division. I found that *the process of reunion* in both these nerves is the same, but that the period of *the return of their functions differs;* sensibility shewing itself on the fifteenth day, motion not commencing till the twenty-first. I conclude, from the experiments referred to, that to transmit sensation is easier to a nerve than to transmit the stimulus to muscular action; and that this difference accounts for the greater frequency of palsy than anæsthesia. It does not seem to me a valid objection to this explanation, that numbness of an extremity occasionally precedes palsy. The fact, however, deserves to be well borne in mind, as capable of giving ,in practice, an important warning of a contingent danger. It may be variously explained. Perhaps its origin is indirect, and to be sought for in the following facts.

8. The palsying blow upon the cord extends an influence to agitation or organic life. A gentleman, 80 years of age, was smitten with weakness of the left side of the face, and left arm and hand: the left leg was not weakened by the imperfect palsy-stroke, but it was extremely cold when examined as he lay in bed, the right leg being warm. Is it possible that this coldness, the result of the lowest degree of palsy, should produce secondarily (as cold often does) any degree of numbness? The lowering effect of the palsy-shock on organic life, is strongly shewn in the feebleness and irregularity of the pulse, as well as in the failure of nutrition which it occasions: a proof of the latter is, that the skin inflames and blisters more readily in anæsthesia than under natural circumstances.

9. I have hitherto considered symptoms, which manifest depression of power; but lesions of the same organs are not less liable to produce excess of excitement. The voluntary nerves, in this state, carry inordinate stimulation to the muscles, which are then affected with spasms, either continued or *tonic*, or intermitting or *clonic*. The nerves of touch, on the other hand, may become acutely alive and sensitive, and communicate sensations of the acutest pain.

As a general rule, it will be found that affections of the substance of the brain, or of its cavities, or of the substance of the spinal marrow—such as hæmorrhages, serous effusions, inflammation; or such external effusions or formations as produce *partial* compression of the substance of these organs—tend to cause palsy, or anæsthesia; whereas ordinary affections of the membranes rather excite than depress, irritate instead of paralysing, and give rise to pain, or spasm, or both.

But through what channel are exciting impressions from the brain carried to the spinal cord? I am hardly prepared with facts at present to enable me to come to a satisfactory conclusion upon this subject. I think that I have often seen, in injury of one hemisphere of the brain, convulsive movements of *the same side* of the body, combined with palsy of the opposite side. On the other hand, I have certainly seen weakness of the opposite side, combined with occasional spasms of the opposite side. In the latter case, I see no reason for doubting that the decussating fasciculi of the anterior pyramids are the channel, which equally conveys the exciting as the depressing influence. In the former case, it is natural to conjecture that the exciting influence is conducted along the posterior substance of the crura cerebri to the same side of the medulla oblongata.

Let me now proceed to give an outline of the injuries and diseases to which the spinal cord is liable.

Simple *concussion* of the spinal marrow may produce complete suspension of its functions. In a case given by Boyer, complete paraplegia had been instantaneously produced by a fall into a ditch: the patient died. On dissection, no disease could be discovered either in the head or spinal canal. Frank mentions four fatal cases of concussion of the spine, on the post-mortem inspection of which no change in the spinal marrow was detected, or injury of the vertebral column. Instances of this description throw light upon the nature of those cases of more frequent occurrence, in which persons recover after all varieties of palsy and anæsthesia, that have instantaneously followed blows or falls upon the back. In all such cases, however, there is a threefold risk—first, of the palsy being quickly followed by death; secondly, that the concussion (having been attended or not by ecchymosis of the nervous substance) may give rise to disease of the spinal marrow, vertebral column, or both; thirdly, of the palsy being permanent.

There are some remarkable instances of wounds of the spine, that have been recovered from; which, however, perhaps were but bruises of the cord, the theca not having been certainly penetrated.

A young man was struck on the back of the neck with a poniard, three fingers' breadth below the left ear: the wound penetrating obliquely towards the right. Immediate loss of sense and motion of the whole body ensued, the head alone feeling. During the first few days, there was retention of urine and constipation;

afterwards, involuntary discharge of urine. Towards the eighteenth day, feeling began to return on the left side; on the twentieth, the patient could move the digits of the left hand and foot; and feeling and motion of the left side increased daily. On the thirtieth day, feeling began to re-appear on the right side; shortly after, motion. In three months he was so recovered that he could walk a little; the left side, however, having kept in advance of the right. —*Morgagni.*

A drummer of the National Guard of Paris was struck on the back of the neck with the point of a sabre, which was thrown at him: his limbs bent under him, and he fell. The left arm was palsied. This effect was permanent. The left leg was likewise affected with weakness: but this disappeared on the fourth day. On the thirteenth day it was accidentally discovered that the right side of the body, from the fourth rib downwards, had lost its feeling: this anæsthesia was permanent.—*Boyer.*

Simple pressure or division of the spinal cord above the origin of the phrenic nerves, is instantaneously fatal. The lower the injury, the longer is the period the patient may survive, and the greater the small probability of recovery.

When the spinal marrow is cut across, —as by a musket ball, or lance or sabre wound, at or below the lowest cervical vertebræ,—or is torn in fracture of the vertebræ, the patient may live from two, three, or four days, to several weeks: if the injury is at the lower part of the back, it is possible that he may recover, but with permanent paraplegia. The fatal turn of such a case is marked by the lining membrane of the bladder becoming inflamed and secreting a thick ropy mucus, which imparts a strong ammoniacal quality to the urine: this change is followed, in a few days, by the patient's death.

The cause of this inflammation of the bladder, I conceive to be the interruption of its supply of nervous influence. Thus, when the pneumogastric nerve is divided, the lungs and stomach become inflamed; when the fifth nerve is divided within the cranium, the eye-ball inflames. So it is likewise with the bladder.

A young man died in the Middlesex Hospital after fracture of the third lumbar vertebra: there was palsy of the right leg, and the bladder had inflamed. The only injury to the contents of the theca vertebralis had been a severe bruise of the right fasciculi of the cauda equina; several of them appeared as if they had been pinched; they were bloodshot at the part, and adhered together by lymph.

Inflammation of the bladder is a symptom liable to be connected with any form of paraplegia.

Pressure upon the spinal marrow operates in two ways: one resembles the effect of a ligature or other strong pressure made upon a nerve. It is probable that pressure of this kind made upon the spinal cord by fracture and depression of the bony arches of the vertebræ, would sometimes admit of being relieved by an operation analogous to trephining. But it is no less probable, that if the injury in such a case were so great as to require the operation, it would likewise be too great to be relieved by it. The other mode in which pressure operates is less explicable; there must be some additional element besides pressure to concur in producing the effect.

A woman, ætat. 48, was attacked, twelve years ago, with pain in the middle of the back, and sickness. There were no paraplegic symptoms, but the spinous processes of three of the dorsal vertebræ became prominent backwards. She was received into St. George's Hospital, and was kept in bed a year, with issues on the sides of the projecting spinous processes. She recovered. Six months ago, this patient having enjoyed good health in the interval, was slowly attacked with paraplegia: after a few weeks, there was total loss of voluntary power in the legs and thighs, and numbness from the loins downwards. This was unattended with any pain of the part of the back before diseased. Nevertheless, I applied caustic issues on either side of the projecting spinous processes, and she was not moved from her bed. A little fever gradually supervened: the belly was hard and obstinately costive; the urine was passed involuntarily; the thighs were frequently drawn spasmodically to the belly, the knees being at the same time strongly bent. She sank, and died.

On examining the body, the spinal marrow and its membranes were found free from disease; but there existed in front of three of the dorsal vertebræ a thick sac, covered by the pleura, which contained about two ounces of what I suppose was inspissated pus: it had the appearance and consistence of putty. This rested upon the anterior surfaces of the bodies of the vertebræ, which had been partially absorbed with the intervertebral substance at the former attack, but now were remarkably hard and firm, and their surfaces covered for the most part with strong fibrinous membrane.

The preceding case, with so little to produce the symptoms that attended it, may be well contrasted with the following, which exemplifies the opposite extreme.

Renee Aleyon, ætat. 38, had experienced, for a long period, pain at the upper and

back part of the neck: any motion,—that of swallowing, or even breathing,—increased it. The neck became drawn backwards and fixed by the instinctive action of its muscles. She died gradually of phthisis, the cough attending which added to her suffering. Some little difficulty of swallowing and of breathing she had experienced, but no palsy or anæsthesia.

On inspection, the odontoid process and the transverse ligament were found to have perished by caries and ulceration. A displacement forwards of the atlas upon the dentata had taken place to such an extent that the articular surfaces of the latter were covered on their anterior half only by those of the atlas.—*Ollivier.*

Inflammation of the substance of the cord.—A gentleman, who was liable to epilepsy, complained of uneasiness of the throat, with difficulty of swallowing, accompanied by acute pain in the neck and occiput, followed by fever, embarrassed breathing, and vomiting; he then was seized with numbness of the left hand, which speedily extended up the arm; the right was immediately after affected in the same manner, and on the following day they were both paralytic. The legs were not in the least affected, nor the functions of the bladder or the bowels. He died on the eighth day, having preserved his intellects to the last.

Inspection.—There was extensive softening of the upper part of the cord, chiefly of the grey matter, which was of a rose colour, with a highly vascular state of the membranes.—*Ollivier.*

In another case, with extensive softening at the upper part of the cervical portion, extending nearly through the whole thickness of the cord, there was palsy of all the limbs.—*Ollivier.*

In a case described by Dr. Abercrombie, the progress of the disease was slow, and lasted from October to the July following; the symptoms being coldness and numbness of the feet, with diminished power of motion; after several weeks, complete palsy of the legs, and inability to empty the bladder; tightness across the abdomen; spasms, like opisthotonos. In the intermediate April, some amendment occurred, with the power of moving the legs when supported by crutches. Two days before death, the right arm became paralytic, and his speech impaired. The loss of sensation was never complete.

Inspection.—The whole cord was of a pale rose colour, and was in every part entirely diffluent. The medulla oblongata was softened on its anterior part, as well as the adjacent portion of the annular protuberance.

A young soldier, after recovering from a petechial fever, was affected with pain in the back, difficulty of moving the legs, retention of urine, involuntary discharge of fæces. The weakness of the legs increased to perfect palsy, in which the upper extremities were shortly after involved; he then lost his speech; and after lying a fortnight in this state, but in possession of his intellects, he died suddenly. At the lower part of the back the cord was in a state of suppuration, dissolved, and disorganized.—*Brera.*

A woman, ætat. 56, was seized with loss of power of the limbs of the left side, without anæsthesia: voice feeble; speech embarrassed; pulse natural; respiration frequent. Death in a week from the seizure.

Inspection.—The brain sound, but the pia mater injected. In the centre of the right half of the cervical portion of the spinal cord there was a cavity, three inches long, by two or three inches in diameter, full of soft matter, like pus; this became more consistent towards the parietes of the cavity, which were about a line and a half in thickness, and formed by the healthy white matter. In the left column of the same portion of the cord there was a like disease, but less extensive, being about one inch long, and one line in diameter: its contents were less purulent, rather resembling softening of the cord. The membranes of the cord were thickened at this part.—*Velpeau.*

The additional features of inflammation of the spinal marrow are, contraction of the limbs (either tonic or clonic), sensation remaining,—or with palsy, the sensibility heightened (with hypertrophy of the posterior fasciculi of the spinal nerves being sometimes added),—the extent and character of the symptoms being dependent on the part of the cord attacked, and on the limitation of the changes to either half, and to the anterior or posteior fasciculi.

Portal describes the case of the Marquis de Causan, in whom, in the space of a year, a gradual palsy of the left side, commencing in a prickling of the fingers, had supervened. Palsy of the right side gradually followed; sight, hearing, speech, deglutition, in succession failed. On dissection, the cervical part of the spinal cord was found to be *as hard as cartilage*, and its membranes were red, as if inflamed.

Inflammation of the membranes of the cord.—A gentleman, ætat. 26, had been liable for several years to suppuration from the right ear, with occasional severe headaches, which were temporarily followed by a considerable increase of the discharge. The first week in April, 1817, he became ill, with headache, disturbed sleep, loss of appetite, but little or no increase of pulse. About the 7th the pain left the head, and attacked the neck; it gradually moved down the spine, at the lower part of which,

after several days, it became fixed, being more severe at this part than it had before been when occupying the upper part of the neck, and extended round the crests of the ilia, with great uneasiness of the belly, and pain and difficulty in passing the urine. On the 15th, great increase of suffering, under which the patient was continually walking about, grasping the lower part of the back with his hands; repeated rigors. On the 17th, convulsive twitches of the face; difficulty of swallowing; squinting, not permanent; pulse from 120 to 130. After bleeding from the arm, he appeared relieved, and lay down in bed; he soon rose, and became delirious and unmanageable; then threw his head back, fell into a state of coma, and died in two hours.

Inspection.—Brain healthy; gelatinous deposit under the medula oblongata; the spinal cord covered with purulent matter, which lay betwixt it and its membranes—the matter most abundant near the foramen magnum; substance of the cord itself soft, and in some places much divided into filaments.—*Abercrombie.*

The preceding case is valuable from the general absence of symptoms, which are thus shewn to be in some sort accidental.

The symptoms commonly present are—strong extension or incurvation backwards of the spine, with retraction of the head, the spasm sometimes extending to the limbs; pain in the back, sometimes a prominent feature, sometimes developed on motion only; pain and difficulty in passing the urine: paraplegia is an occasional, but by no means a common attendant.

A child, between three and four years of age, died with symptoms of opisthotonos, difficult deglutition, and coma. There was found, on the post-mortem inspection, a deposition of a red and very consistent fluid in the cellular texture, between the dura mater of the cord and the canal of the vertebræ in the dorsal region; serum within the membranes; and the arachnoid of the cord covered with albuminous secretion for four inches.—*Ollivier.*

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO RECEIVED CERTIFICATES DEC. 31, 1834.

John Donoldson Potts, Jamaica.
William Robins, Moreton in the Marsh.
Walter Duke, Hastings, Gloucestershire.
Francis Wyley, High Onn, near Stafford.
Nicholas George Hobson, London.
Edward Baker, Birmingham.
James Trench, Neath, Glomorganshire.
John Hutchinson, Newsham, Yorkshire.
John Dickenson, Wrexham.

JANUARY 8, 1835.

Peter Sampson, Manchester.
Abraham Crisp Gall, Woodbridge.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *Jan.* 6, 1835.

Abscess	2	Heart, diseased	5
Age and Debility	30	Hooping-Cough	15
Apoplexy	3	Inflammation	30
Asthma	13	Bowels & Stomach	4
Cancer	2	Brain	1
Childbirth	1	Lungs and Pleura	17
Consumption	58	Insanity	4
Convulsions	30	Liver, diseased	2
Croup	7	Measles	15
Dentition or Teething	5	Mortification	1
Diarrhœa	1	Paralysis	2
Dropsy	11	Small-Pox	8
Dropsy on the Brain	13	Sore Throat and Quinsey	2
Dropsy on the Chest	4	Spasms	2
Epilepsy	1	Thrush	3
Fever	5	Unknown Causes	9
Fever, Scarlet	7		
Fever, Typhus	2	Stillborn	19
Hæmorrhage	2		

Increase of Burials, as compared with the preceding week . . . 25

METEOROLOGICAL JOURNAL.

Dec. 1834.	THERMOMETER.		BAROMETER.	
Thursday . 25	from 29	to 43	30·32	to 30·31
Friday. . . 26	33	42	30·39	30·46
Saturday . 27	36	43	30·45	30·49
Sunday . . 28	30	44	30·47	30·45
Monday . . 29	25	44	30·47	30·32
Tuesday . 30	40	50	30·24	30·11
Wednesday 31	40	55	30·06	30·04

Wind variable, S. and S.E. prevailing.

The 25th and 26th cloudy, with frequent intervals of sunshine; the 27th very foggy; the 28th, and morning of the 29th, generally clear: rain in the evening of the latter day; the 30th and 31st cloudy, with rain at times on the 30th.

Rain fallen, ·175 of an inch.

Jan. 1835.				
Thursday . 1	from 38	to 51	30·04	to 30·20
Friday . . 2	35	46	30·37	30·49
Saturday . 3	30	43	30·60	30.63
Sunday . . 4	24	38	30·62	30·57
Monday . . 5	23	39	30·48	30·44
Tuesday . . 6	24	37	30·37	30·30
Wednesday 7	16	34	30·25	30·23

Wind variable, N. by E. prevailing.

The 1st, 2d, and 3d, cloudy; the three following days generally clear; very foggy during the 7th.

CHARLES HENRY ADAMS.

MINUTE ANATOMY OF THE LIVER.

In our analysis of Mr. Kiernan's paper in our last number, page 482, col. 2, line 4 from the bottom, the words "called *sub*-lobular veins," were by mistake introduced in connexion with the smaller branches of the *portal* vein, instead of the *hepatic* vein, to the branches of which the term sublobular is exclusively confined. By merely striking out the above words, the description is rendered perfectly clear.

W. WILSON, Printer, 57, Skinner-Street, London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, JANUARY 17, 1835.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture XVI.

DISEASES OF THE PARENCHYMATOUS STRUCTURE OF THE LUNGS.

PHTHISIS PULMONALIS.

We have thus, gentlemen, described the morbid anatomy of tubercles in the lungs: we now proceed to their signs in the usual order.

Local Signs.

1. *Of the accumulation of gray or crude tubercles — Respiratory murmur.* — When but few gray or crude tubercles exist, the pulmonary structure between them is yet healthy, so that the respiratory murmur may be distinctly heard. There is then, in fact, no local sign of their presence; but when they are accumulated in masses, so as to encroach considerably upon the texture of the organ, the respiratory murmur is completely lost at the points of accumulation. I have already stated that tubercles are always primarily deposited in the upper lobes of the lungs; it is therefore immediately below the lines of the clavicles, and in the axillæ, that the absence of the respiratory sound occurs first. When you suspect tubercular disease, examine these regions with the greatest care; apply the stethoscope to the skin itself, press it firmly, and place the ear upon the instrument, so that no rustling sounds shall be produced, otherwise you may easily be deceived.

Bronchophony.—As the softening process has not yet commenced, the bronchial tubes traversing the tubercular matter are intact; and the consequence is, that when the patient speaks the voice is resounded in these vessels, constituting the bronchophony of Laennec. This sound is to be sought for immediately below and along the lines of the clavicles, in the supra spinal fossæ, and in the axillæ; but if it be heard at the internal and superior angles of the scapulæ, no inference should be drawn, because of the presence of large bronchial tubes, which sometimes occasion that sound there naturally.

Percussion.—When the tubercles are isolated, and at some distance from each other, the resonance upon percussion is natural; but as they increase in number, so as to form masses, then percussion elicits a dull sound. The diminished sound extends often from the clavicle to the fourth rib, and is also found in the axilla. Absence of respiration, bronchophony, and dulness of resonance upon percussion, usually co-exist in this stage of the disease at the same parts of the parietes of the chest.

2. *Softening of the tubercular mass.*—The above signs persist for some time, but there is now superadded a slight crepitating sound, varying in duration in different individuals. This crepitation is followed by a gurgling noise (the *gargouillement* of Laennec), as if produced by the movement of a thick matter. As the tubercular mass becomes still softer and thinner, a distinct mucous rattle becomes also daily more distinct.

3. *Tubercular excavation—Cavernous cough and respiration.*—When the tubercular matter is expelled, a cavity is left in the lung. The emptying of this cavity is rendered evident by a cough or a forced respiration; in both cases loud sounds are produced,

called the *cavernous cough and respiration*. While the softened matter is present, these cavernous sounds are accompanied by a mucous rattle. When the cavity is evacuated, these signs give the idea of the cough and respiration being resounded in a capacity of much larger dimensions than usual.

As the cavity empties, it occasionally happens that the sound produced by percussion becomes clearer; the contrary is most frequently the case, because a large quantity of tubercular matter generally surrounds the excavation.

When the softening matter is very near the surface of the chest, a gurgling sensation may sometimes be felt by the hand; this is caused by the rattling of the fluid, especially when the patient coughs: he occasionally even feels it himself. When the anterior parietes of the excavation are very thin, and the patient is much emaciated, percussion elicits a sound something similar to that produced by striking a broken vessel—as a cracked earthenware pot.

If, also, the excavation be very near the surface, the blowing respiration, or "souffle," takes place—that is, whenever the patient inspires quickly, he appears to draw the air from the ear of the observer, and on expiration he seems to drive it forcibly back again; every time he speaks, the same sensation is felt, although it rather immediately follows the voice than accompanies it. To distinguish this well, the patient should be made to speak in monosyllables. The modification of the blowing respiration, called the "souffle voilé," is also given when the anterior parietes of the cavity are very thin, soft, and not adherent to the costal pleura. It appears, then, that every vibration of the cough, voice, or respiration, agitates a moveable partition between the excavation and the ear of the examiner.

When the cavity is completely empty, the cavernous cough and respiration are rendered perfect; the mucous rattle now disappears, sometimes to recur slightly, in consequence of the secretions going on in the parietes of the excavation.

Pectoriloquy.—The most interesting of all the signs of an evacuated cavity is the pectoriloquy. It may, however, exist in an imperfect state before the evacuation is complete. I have already endeavoured to account for this sign, but this is the time to describe the circumstances by which its varieties are produced. I shall present to you Laennec's observations upon this subject.

We should conclude nothing from doubtful pectoriloquy, when it occurs in the interscapular regions, in the axillæ, or at the union of the clavicles with the sternum, or even from the clavicles to the third ribs. The sign is doubtful if it exist equally on both sides of the upper part of the chest. The cause of all these doubts is, that the upper lobes contain a larger proportion of bronchial tubes, of greater diameter than the rest of the lungs, and some of them frequently take a superficial course; so that what is really bronchophony may be mistaken for a doubtful pectoriloquy.

If, too, the stethoscope be applied perpendicularly upon the upper surface of the clavicle, between it and the superior edge of the trapezius muscle, the resonance of the voice from the trachea and larynx is sometimes very similar to pectoriloquy.

But if a doubtful resonance of the voice be found below the third or fourth rib, or on one side only, there is then a strong presumption that it is pectoriloquy. If the sound does not exist at the same time at the points of the chest corresponding to the upper lobes, the sign is certain. The conclusion should then be, that the cavity is deeply seated, or that it is yet partly filled with incompletely softened tubercular matter.

On whatever part of the chest the voice is resounded more loudly than on the corresponding part of the opposite side, and particularly if it be so intense as to appear stronger and nearer to the ear of the observer than that which proceeds from the mouth of the patient, the sign is then as certain as if the articulation were heard distinctly passing up the tube, and the pectoriloquy is *imperfect*, but not *doubtful*. Between perfect and doubtful pectoriloquy there are many intermediate degrees, which practice alone can teach, and which it would perhaps be impossible to describe.

The pectoriloquy is always most evident in persons having acute voices, as in women and children.

In men whose voices are very grave, the pectoriloquy is often imperfect and doubtful, even when the excavations are in a proper state to produce that sign. The voice then appears agitated and trembling; it seems to be unable to introduce itself into the stethoscope, but resounds loudly at its extremity, and is heard as if through a speaking-trumpet. But it is a perfect sign of a cavity, especially if no such sound be audible on the opposite side of the chest.

The most evident pectoriloquy may present differences; thus the voice may pass continually through the tube, it may be intermittent, or some acute tones only may be heard: this intermittence occurs when the communicating bronchial tubes are temporarily obstructed by mucus. By making the patient cough, the pectoriloquy is easily reproduced.

In relation to the voice itself, the pectoriloquy may vary: the articulation of the words may be more or less distinct, the nature of the sound more or less altered; usually the voice is a little stifled. Sometimes the sound is fuller than from the mouth; it is, however, commonly stronger, and the patient occasionally speaks through the tube as if he placed his mouth to your ear.

Laennec observes, that when the voice is reduced to a mere whisper, still the pectoriloquy exists.

The thinner the parietes of the excavation, the better is the phenomenon produced.

Moderate-sized unilocular cavities give the pectoriloquy best: small ones, however, occasion it to be very distinct. In a multilocular cavity the articulation of words becomes stifled and confused.

In cavities whose upper parietes are thin, and can collapse, the pectoriloquy may be entirely lost.

If the pectoriloquy be continued, evident, well articulated, and unaccompanied by any other sound, the excavation is complete, and its bronchial orifices are large.

When a cavity is very large, and is but little anfractuous, the pectoriloquy is entirely lost, but then the amphoric respiration and the metallic tinkling become evident; the first occurs most frequently. Laennec states that the Hippocratic fluctuation rarely co-exists with the metallic tinkling in these cases. I have tried to produce it in above twenty different instances, and have never succeeded.

It is necessary for the production of the metallic tinkling, that the cavity should be exceedingly large, and that it should contain a certain quantity of fluid. If the quantity be very slight indeed, the phenomenon will not appear, but the voice, the cough, and respiration, are accompanied by the amphoric sound.

When an excavation bursts into the pleura, the pectoriloquy is usually lost; we shall advert to this again, in speaking of the combination of *Pneumo-thorax with Empyema.*

Functional Signs.

Dyspnœa.—The degree of dyspnœa is often extremely variable. The patient, at the commencement of the disease, experiences more or less difficulty of breathing, which usually augments as the tubercles soften. The causes of the dyspnœa are not only the presence of tubercles, but also of catarrh. It might be supposed that the intensity of this functional sign depended upon the quantity of tubercles in the lung; but such is the general wasting of the body, such is the diminished quantity of blood in the system, the proportion sent into the lung is so small compared to the healthy state, that the necessity for respiration becomes extremely diminished also, so that frequently towards the termination of the disease the patient suffers less from dyspnœa than might be expected from the organic lesions existing in the lungs.

Cough.—This symptom is present in all stages of the disease; it is slight and dry at its commencement, but as the tubercles soften, and the accompanying catarrh supervenes, it is attended by a more or less copious expectoration. The most violent coughs depend upon the co-existence of ulcerations of the larynx, epiglottis, and rima glottidis.

Expectoration.—It had long been thought that phthisis depended upon inflammation of the lungs, and that the matter expectorated was pus. Under this supposition, it became a subject of importance to determine the difference between pus and the yellow secretion, or mucus, arising from inflammation of the bronchial tubes. The following differences were pointed out:—

Pus.	*Mucus.*
Dissolve both pus and mucus in sulphuric acid; pus precipitates,	but mucus does not.
Oxymuriate of mercury does not coagulate pus;	it coagulates mucus.
The microscope shews pus to consist of semi-opaque globules	mucus—of flakes.
Pus sinks in water;	mucus floats.
Pus evaporates to dryness without first coagulating;	mucus coagulates first.

But the examination of these differences is of no use whatever in forming our diagnosis of phthisis, for the disease is not the result of inflammation of the lungs, and consequently the fluid expectorated is not pus, but a mixed matter derived from different sources.

The sources whence the expectoration is derived, are, 1st, the irritated bronchial tubes and trachea: catarrh is formed, and the mass of the sputa is constituted of mucous or pituitous matters, or a mixture of both. 2dly. The softened tubercular matter itself: this may put on a puriform appearance, or, what is still more common, it consists of whitish, curdy, irregular, small pieces, or flakes, mixed up in the catarrhal secretions. You should be careful, however, in examining whether they are not really curds of milk, for they are

not unfrequently the causes of this appearance. Certain curdy productions will also occasionally result from chronic inflammation of the amygdalæ; these glands should therefore be examined.

The quantity of the fluid expectorated is sometimes very considerable; for though it may not ordinarily be more than a teacupful, yet it occasionally amounts to more than a pint in a day. The mass of these secretions arises from the bronchial tubes. The softened tubercular matter can only be in very small proportion, since an excavation of the capacity of a pint measure is often many months in forming and evacuating its contents. The quantity, therefore, of softened tubercle contained in the matters expectorated, has been supposed to be scarcely a thousandth part.

The third source of the expectorated secretions is from the parietes of the excavation; but the nature of this has not been sufficiently studied. It is probably but small in quantity, and if it be like the matter which may be scraped from the surface of the cavity, it is of a pituitous nature.

Blood in small quantity may be expectorated in any stage of the progress of tubercular matter. I have met with it before any expectoration had taken place, or, indeed, before the development of any local signs. It is commonly seen in streaks, or spots, in the expectoration. Hæmoptysis is rarely considerable; I have met with but few instances of its being the immediate cause of death; in one of them the bleeding arose from a ruptured vessel opening into the excavation.

Small quantities of ossific matters are sometimes mixed up with the expectoration; I shall shew the sources of these when I speak of ossific concretions.

Pain—Oppression. — The patients rarely complain of pain, except slight pleurisies occur; they have not commonly, either, any sense of oppression in the chest, or, if present, it is but slight.

Paraphonia. — The voice, especially towards the close of the disease, often becomes hoarse, and reduced to a whisper; this, though partly arising from the exhaustion of the patient, is principally caused by the ulcerations in the larynx and trachea.

Such are the signs which may be referred to the lesion of the functions; we now proceed to those arising from the sympathetic disorder of the general system.

General Signs.

That general condition of the system known under the appellation of *hectic fever*, prevails in all the stages of this disease. It is least manifest during the crude state of the tubercles, most evident during the period of their softening, and diminishes when the excavation is completely formed.

Hectic fever has been classed among the remittents; it is said to have two accesses in the twenty-four hours, the one being in the middle of the day, and the other towards the evening; the latter being the longest. From long observation, I can say that the meridian access is rare. The access generally commences with horripilations (according to Louis in five-sixths of the cases), accompanied by great sensibility to cold, although the skin may feel warm to the observer. The hot stage soon begins, and lasts usually for many hours, terminating in the morning in perspiration.

These perspirations, or, as they are commonly called, *night sweats*, are highly characteristic of phthisis. The quantity is sometimes enormous, completely wetting the head and the whole body, the night-clothes, and sheets; they have been seen penetrating deeply into the mattress or bed on which the patient is placed. These sweats often occur when the other symptoms of hectic fever are not marked. I have seen them in so early a stage of the disease, that the local signs were not present; indeed, their presence, if combined with frequency of pulse, is often alone a sufficient indication to the experienced practitioner of the approach of this fatal disease. There seems to be some relation between this sweating and sleep, for the profuseness of the one often depends upon the completeness of the other: even if the patient sleeps at any part of the day, he almost always awakes in a state of perspiration.

The urine is usually high-coloured, and deposits a furfuraceous sediment. The thirst is rarely great, even during the febrile access. The tongue is often healthy at the beginning, but towards the termination of the disease becomes dry, of a deep red colour, and its edges and point, and then its surface, and the throat, are covered by aphthous vesicles, leaving sores which distress the patient, and prevent free deglutition.

The lesions of the stomach are often shewn by anorexia, nausea, and even vomiting; frequently these signs are absent, and the patient preserves a tolerable appetite to the last.

The ulcerated condition of the intestinal tube almost always causes *diarrhœa*: this is one of the most prominent and common signs of phthisis, and exists in every stage, but most frequently during and after the period of the softening of the tubercular matter.

The catamenia are usually diminished at first, and totally cease as the disease progresses. Females are apt to attribute

the whole of their symptoms to this irregularity; but it is an effect, and not a cause.

The pulse is accelerated at all periods of the disease, but most during the hectic paroxysm.

Debility prevails from the commencement; yet this varies considerably. Some will take to their beds early, not to leave it; I have met with others who have been walking in the streets on the day of their deaths.

If the disease be slow and chronic in its course, extreme marasmus is produced. Aretæus gives us the following picture of it:—

The nose becomes thin, especially at its point; the malar bones project, and the skin covering them is of a brilliant red colour, of a circumscribed form; the conjunctivæ shine, and are of a light pearly blue; the eyes are large, although somewhat sunk in their orbits; the cheeks are hollowed; the lips retracted, presenting often the appearance of a bitter smile. The neck is oblique, and as if oppressed in its movements; the shoulders are elevated; the ribs project; the intercostal spaces are depressed; the scapulæ are elevated like the wings of a bird; the belly is contracted and flattened; the articulations appear large; the nails are curved; and the hairs gradually fall from the head. No disease produces such great marasmus, excepting cancers, empyema, and fevers of long duration.

During the whole course of the disease all the mental faculties are perfect. If there be any thing anormal, it is in the strong hope, nay certainty, which the patient has of his ultimate recovery.

Having, gentlemen, described the symptoms of this formidable disease, let us now throw our observations into one point of view, by tracing a patient throughout its course.

I will imagine an individual of from 18 to 22, or 24 years of age, a female, brought to you perhaps by an anxious parent, whose solicitude is increased by having already lost some of her children by this insidious malady. You examine your patient; you perceive the eye to be of a bluish tint, and of a somewhat pearly lustre; that the checks are coloured with a red and unhealthy bloom, irregularly circumscribed; that her form is attenuated, the nails curved, the hair thinned and falling off, and the pulse frequent. Upon questioning her, she smiles at her mother's fears, and denies the existence of any ailment. You perceive she coughs slightly; that there is no expectoration, or merely a little pituitous matter—occasionally, perhaps, tinged with a spot of blood. She accounts for all this by attributing it to a recent cold; she admits that her respiration is somewhat quickened; even now there are frequent night sweats, irregularity of bowels, sometimes costiveness, sometimes diarrhœa. The catamenial flow is diminished in quantity, or irregular in its return.

Examine the local signs at this period: there may be none, for the tubercles may be yet gray, or crude, and not great in quantity; or there may be absence of respiration, bronchophony, and dulness upon percussion below the lines of the clavicles, or in the axillæ, indicating the presence of tubercular masses yet unsoftened.

I will suppose that a few weeks have passed, and you are now called to visit your patient, for you are told she cannot leave her room.

The eye has still further assumed the pearly lustre I have described; the redness of her cheek is still more vivid, or there is a deadly paleness; the malar bones project; the cheeks have lost their rotundity; the dyspnœa is at its height; the cough constantly torments her; the expectoration is copious, consisting of a mixture of pituitous and mucous matters, with shreds of a curdy substance floating in it, and often also small spots or threads of blood. The hectic is now completely formed; in the evening a slight horripilation is succeeded by heat, which continues during the night. The patient sleeps nevertheless, if the cough does not torment her, and awakes in the morning bathed in perspiration. Now the urine deposits copiously a furfuraceous sediment; the diarrhœa is constant; the catamenia have totally ceased; the pulse beats from 100 to 130, or 140, in the minute; the weakness is great, but her never-failing hope still buoys her up; she is yet certain that she is labouring only from the effects of a common cold, from which she will soon recover.

This period coincides with the softening of the tubercular matter; the local signs evince it; for if you apply the stethoscope, a distinct crepitation, or the still louder sound of gurgling (gargouillement), is heard at the parts corresponding to the upper lobe of one or other of the lungs; an imperfect pectoriloquy exists, and the cough and respiration are becoming cavernous at the same points.

Let us now suppose that the third and the last period has arrived; you will now find that the change is still greater; the malar bones are still more prominent; the cheeks still thinner; the lips are retracted, and give the bitter smile. The neck now appears somewhat awry, the ribs project, the intercostal spaces are deep, the scapulæ are elevated, the abdomen is flat and contracted, the flesh of the whole body is ex-

traordinarily reduced in quantity, the articulations appear large, and the nails more incurvated.

At this period the dyspnœa frequently diminishes, but the cough is often unceasing; not so much from increased fluid to be expectorated, as from the irritating ulceration of the larynx and parts adjacent. From the latter cause, also, the voice becomes hoarse, and reduced frequently to a whisper. The mouth, tongue, and fauces, become exceedingly tender from the aphthous eruptions.

The hectic fever now frequently becomes less; the night sweats even often cease, as if from diminished materials; the diarrhœa continues, and is colliquative. Hope, however, still clings to the patient; she often will not hear of doubts of her recovery, but is constantly forming projects for the future. At last the pulse gradually sinks, the voice is lost, the power of expectorating fails, the head falls forwards, or laterally, by its own weight, and the patient frequently expires so quietly, that the attendants are for some time unaware of it.

If you examine the patient during the progress of this stage, you will find the excavation, or excavations, complete; the pectoriloquy becomes, therefore, evident, and the resonance of the cough and respiration in the cavity cavernous. In some instances I have met with ravages so extensive, that nearly the whole of the lung on one side has been destroyed. In these cases the *bourdonnement amphorique*, and the *tintement metallique*, were perfectly distinct.

The three successive periods of the disease which I have just attempted to describe were denominated by the older writers—*phthisis incipiens*, *phthisis confirmata*, *phthisis desperata*.

Causes.

1*st*, *Remote causes.*—Individuals of all temperaments are subject to tubercular deposits, but it most commonly occurs in those of the nervous and sanguine lymphatic. Persons thus constituted have the skin of a brilliant fairness of colour, and fineness of structure; the cheeks of a lively red; the neck narrow and long; the transverse diameter of the chest often diminished; the shoulders high; the scapulæ projecting; and a general thinness of the whole frame. Phthisis attacks all ages, and both sexes, as I have shewn you in the preceding lecture. There is perhaps no disease which results from hereditary predisposition so frequently as this. Moral causes, such as distress of mind, great seclusion, &c. may also be classed among the strongly predisposing causes.

The external causes are—1stly, Cold, especially if combined with humidity. Phthisis is thus most common in the north of Europe and America; it is a frequent disease also in France, Italy, and Greece, but generally less so in the meridional parts of Europe, and least of all in the tropics. In speaking of localities, it is found to be more frequent in large towns than in small ones, more common in the interior than on the coasts. It is rare on board ships. 2dly, Too slight clothing may be assigned as a cause of phthisis, by permitting the influence of atmospheric variations to act too suddenly upon the body. 3dly, All debilitating causes, as venereal excesses, long courses of mercury, continued fevers of considerable duration, habitual intoxication, &c. 4thly, Some trades have a tendency to produce the disease, as that of knife-grinding. Very sedentary occupations have a similar effect, as those of the milliner, tailor, weaver, &c.

It is thought, particularly in the south of France, that phthisis is contagious. I have seen no proof whatever of the correctness of this opinion. It is true the disease may occur in several individuals of the same family, about the same time; but this circumstance is much more readily accounted for from hereditary predisposition than contagion.

Proximate causes.—Although we shall be able to throw no light upon the proximate cause of phthisis, yet it will be of some advantage to refute the erroneous opinions that have been entertained upon this subject.

Thus, it was the opinion of the ancients that this disease was a consequence of an acute or chronic inflammation of the lungs; and this notion has been renewed by Broussais.

Can phthisis arise from inflammation of the lungs, or peripneumonia? It is difficult to suppose so, since peripneumonia does not co-exist with phthisis in a greater proportion than one-tenth of the cases. Are the products of ordinary inflammation any thing like tubercles? Certainly not. Peripneumonia principally attacks the vesicular texture of the lungs, and often leaves the interlobular cellular substance intact; and yet in the latter tissue the tubercular matter is most commonly deposited. Peripneumonia attacks primarily the inferior lobes of the lungs, in almost every instance; tubercles as frequently are placed in the upper lobes. The reverse should take place if tubercles were consequent upon inflammation of the organ. Tubercles are often seen imbedded in a perfectly healthy tissue, where there is no evidence whatever of inflammation. I have seen [shewing a preparation] the lungs of a fœtus studded with this deposit; was this from previous inflammation?

It is true that inflammation may accidentally accompany, or even be caused by,

the irritation which the tubercular matter may produce; but it cannot be admitted to be the proximate cause of its deposition.

Can *catarrh* occasion the tubercular secretion? The latter is commonly attended by the former, but large tubercles have been seen without co-existing catarrh.

There is scarcely an individual in this country who is not even annually affected by catarrh. Phthisis, if depending upon that disease, should therefore be infinitely more common than it now even unfortunately is. Catarrh is most common on the coasts; phthisis in the interior. This order should be reversed if catarrh were the cause.

If tubercles depended upon catarrh, these deposits should not be found in the interlobular cellular tissue, since the bronchial tubes do not open into it; but they are commonly formed there.

But catarrh and phthisis are two very distinct diseases—the first is an inflammation of the mucous membrane of the air tubes, having for its result a secretion, varying in character; the second is the consequence of a peculiar adventitious deposit; and, as Laennec expresses it, no one has yet, scalpel in hand, shewed the conversion of catarrhal into tubercular matter.

Pulmonary apoplexies have never been seen converted into pus or tubercles. Hæmoptysis often, indeed, seems to precede phthisis; but if the patient be carefully examined, it will commonly be found that the local signs of the latter disease are present at the same time. Tubercles frequently, by their pressure upon the vessels, cause spitting of blood; but the quantity is usually small, and is derived from the bronchial tubes. This hæmorrhage must be considered as a consequence, and not as a cause.

Tubercles have been supposed to be a modification of hydatids. This opinion, I believe, has met with no supporters. I see no relation between the hydatid, even in its earliest budding state, and tubercle.

All we can say upon the subject of the proximate cause is, that this formation is a deposit from the blood-vessels. I am quite aware that this is no explanation, for all adventitious matters arise from the same source. To determine the proximate cause, would be to determine the reason why the blood-vessels should deposit tubercle in one case, medullary sarcoma in a second, melanosis in a third, &c. The cause would probably be found in certain conditions of the system, or of the blood, peculiarly favourable for each particular deposit; of the nature of which conditions we are as yet perfectly ignorant.

Treatment.

I now arrive at the least satisfactory part of this subject — I mean the treatment of phthisis; for I am convinced that art has done little more than to palliate this disease, and that when a cure has been effected, it has been by nature's efforts alone. I have shewn the possibility of a cure by the cicatrization of the excavation; but I do not believe that this event occurs without the formation of a fresh crop of tubercles in one case in two hundred—perhaps not so frequently.

The following indications, which are proposed to be fulfilled by means sufficiently doubtful in these effects, have been laid down by authors.

1st indication. To prevent secondary crops of tubercles.—Bleeding has been employed from remote antiquity, but it is rarely useful except in intercurrent pleurisy or peripneumonia. I use the lancet only when there is considerable dyspnœa, and the patient yet possesses a certain degree of power, and when the pulse is full. Cupping, or leeches, may be applied under similar circumstances; but I do not believe that bleeding can prevent the formation of a secondary crop of tubercles; I think it would rather tend to their production, by increasing the general debility of the system.

Counter-stimulants have also been extensively used, particularly by the ancients. Hippocrates applied the actual cautery at once to the axilla, back, and breasts; Celsus recommended it in six places—under the chin, on the throat, on each breast, and at the inferior angle of each scapula. These violent remedies have now subsided into blisters, setons, caustics, and occasionally also the moxa. Exutories relieve temporary pains and feelings of oppression in the chest, but cannot prevent the fresh formation of tubercles.

2nd indication. To favour the softening of the tubercles.—This indication was supposed to be accomplished by the use of certain medicaments believed to have a solvent power: among these were lime-water, sulphureous waters, either in baths or potations; the muriate of ammonia, the sub-carbonates of potash and soda. But these are very inert medicines. I have tried mercury, barytes, and iodine, extensively, but with no satisfactory results.

3rd indication. To cicatrize the excavations.—A great variety of remedies have been recommended with this intention, as the following list will shew:—Antiscorbutic and aromatic plants, balsams of tolu, Mecca, and Peru, turpentine, and camphor dissolved in volatile oils; artificial atmospheres formed of the vapours of emollient, carminative, narcotic, and balsamic plants; also of certain substances burnt upon

heated iron, as myrrh, benzoin, petraleum, tar, resin, and wax; sublimations of zinc, of sulphur.

Various gases have been employed: oxygen was recommended by Caillé, hydrogen by Beddoes; even sulphuretted hydrogen by Kortin, carbonic acid by Beddoes also; the vapours arising from stagnant pools, from stables; the smoke of snuffed candles, heated air. The vapour of iodine, and chlorine gas, have been the latest remedies of this class proposed.

I have tried many of these remedies, and often with temporary advantage; but I have no doubt that advantage has arisen from the relief they have afforded to the catarrh which accompanies the tubercular disease; for with a tolerable large field for observation, I must say that I never yet have seen a case whose *cure* could be attributed to any one of these medicaments. Most relief, I think, is produced by the inhalation of tar vapour, and of chlorine gas.

Many other means have been proposed, with the view of giving strength to the general system, or to relieve dyspnœa. Thus a milk diet is of very common use, and is often advantageous. The milk has been obtained from women, cows, asses, and mares; perhaps that from asses is the best. Charcoal, champignons, the boletus suaveolens, frogs, vipers, snails, oysters, chocolate, large doses of sugar, wine, &c., have all been lauded in their turns, although principally as articles of diet fitted to this disease. Electricity, cicuta, aconite, digitalis, ipecacuanha, and hydrocyanic acid, have been also successively extolled; but practical men have unfortunately experienced that their beneficial effects, if any, are rarely more than temporary.

Gymnastics, if not carried to excess, are excellent prophylactics, especially rowing and riding on horseback.

In the very early stage of phthisis, when it is yet incipient, or when the patient manifests a tendency to the disease, I believe a long journey, by such easy stages as the patient may not be fatigued, is of the greatest advantage; and I always recommend patients to travel whose means permit it. Sea voyages also frequently produce excellent effects. There is no doubt, too, but that sojourning in a warm climate during the winter season is of great utility; I will not say that it cures the disease, but it often protracts life. I speak here only of the earlier periods of the affection; for I firmly believe that when a tubercular excavation is once formed, no means have yet been discovered which affords the patient any thing but palliation.

The object you should have in view in relation to climate, is to choose a locality where the winter season is temperate, and subject to the least vicissitude. The late Dr. Young observed, that the mean temperature, from October to March, was, from the year 1790 to 1794, as follows:— At London, 43 deg. 5 min.; Penzance, 48 deg. 1 min.; Lisbon, 55 deg. 1 min.; Madeira, 63 deg. In this point of view, therefore, Madeira is the most preferable spot. There is the least vicissitude in the weather in England, at Undercliff, in the Isle of Wight, Torquay, and Penzance; and abroad, at Lisbon, Madeira, Hyères, Nice, in some parts of Italy, and at Montpellier. I refer you for an elaborate account of this subject to Dr. Clarke's excellent work upon Climates.

My plan of treating phthisis is generally as follows:—

If I meet with an individual in the earliest stage of the disease, or in whom only a predisposition to it exists, I place him upon a very moderate animal diet, allowing him no wine or stimulants in any form; I permit moderate exercise, as walking, riding on horseback, or sailing. As the month of September advances, I advise him to change his position entirely, and to winter in a warm climate; if in England, at Undercliffe, Torquay, or in some sheltered valley in the south. If his circumstances permit, let the change be still more complete, by sending him to Madeira, Lisbon, Hyères, or Nice. If the means of the patient do not allow him to effect this, I then recommend him to be confined during the winter months in chambers in which the temperature should be regulated according to his feelings.

At this early period of the disease, if the dyspnœa and cough be troublesome, and the pulse somewhat full and hard, I abstract a few ounces of blood occasionally; but this, gentlemen, should not be too often repeated, as you should preserve the strength of your patient as much as possible. The digitalis, under such circumstances, is of use; blisters, or the tartar emetic ointment, may now be employed. I commonly administer a combination of ipecacuanha, squills, and hyoseyamus, as an expectorant, and endeavour to alleviate the cough by emulsions and other demulcents.

You will often, very often, find, that such is the weak state of the patient, even from the beginning, that he will bear no depletion. In those cases, support him with a bland and non-stimulant diet—as milk, the white meats, jellies, &c.; and you may administer the ordinary tonics, combining them with the acids, if there be night sweats and no diarrhœa.

When the tubercles soften, and the exca-

vations commence forming, I should recommend you, gentlemen, not to send your patients abroad: it rarely, if ever, is of any service, but is often highly disadvantageous; for they are removed from the comforts and attentions at home at the moment they are most required, and they too often, unfortunately, expire in a foreign land, without a friend to afford the last consolations.

As the disease advances, the remedial means diminish daily in their effects: the distressing symptoms alone can be attended to. Thus the cough may be somewhat allayed by demulcents—as emulsions, the lichen islandicus, the Irish moss, &c.; the two latter also serve as articles of diet. Opium produces often the greatest relief in procuring sleep and abating the cough. The hyoseyamus and belladonna have been used with the same intentions, but rarely with such good effects.

I am satisfied that it is injudicious to permit the diarrhœa to continue at any period of the disease, since it produces great exhaustion. It often yields to the ordinary chalk mixture. I sometimes use small doses of the sulphate of copper, combined with opium, if the relaxation of the bowels be very obstinate.

A gargle, composed of borax, honey, tincture of myrrh, and infusion of roses, often relieves the aphthous state of the mouth, tongue, and fauces.

I recommend the inhalation of chlorine gas if the concomitant catarrh be extensive and considerable; and I think with occasional advantage.

Such is the general plan by which phthisis may be *palliated*; but I repeat again, that I believe the disease to be not *curable* by any means proposed up to the present time.

PATHOLOGICAL LECTURES,

BY

PROFESSOR MAYO, F.R.S. &c.

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PATHOLOGY OF THE SPINAL CORD—*(continued.)*

Of Serous Effusion in the Spinal Canal.

THE observations of Magendie have taught pathologists that a sensible quantity of serum exists in the space between the arachnoid and pia mater of the cord in health. An increased secretion of this fluid is not a common form of disorder. The following cases, however, may serve to exemplify it.

A man, ætat. 40, was affected with acute pain and weight in the lower dorsal vertebræ, the pain occasionally extending upwards or downwards to the top and bottom of the spine. After eleven days, he was seized with palsy of the right lower extremity; and in three days more, with retention of urine. The pain was now so acute as to prevent him from lying down; and was soon after accompanied by dyspnœa, vomiting, and tonic convulsions of the trunk and arms, which recurred at intervals, and continued for about fifteen minutes. The left inferior extremity then became paralytic, and he died suddenly. His intellectual faculties had continued entire, except during the paroxysms of convulsion. On inspection, much fluid was found in the cavity of the spine, but the cord was sound; there was also fluid on the surface of the brain, but none in the ventricles.—*Morgagni.*

A child, ætat. 12 months, after appearing to be in much pain, lost the use of the inferior extremities, and died in three days. The spinal canal was found full of bloody serum.—*Chevalier.*

Of Spinal Apoplexy, or Hæmorrhage of the Spinal Marrow.

A man received a violent blow on the three inferior lumbar vertebræ from a log of wood which fell upon him: he died in four hours. Extravasated blood was found in the spinal canal, but the vertebræ were entire, and the cord was healthy.—*Morgagni.*

A lady, ætat. 40, had headache and pain of the back. After a few days, the pain of the back became very acute, and violent convulsions took place, which were fatal after continuing five or six hours. All was sound in the brain, but extensive extravasation of blood was found in the spinal canal, which was most abundant about the seat of pain.—*Ollivier.*

A gentleman, ætat. 61, had just arrived in Paris from a long journey, when he complained of pain of his back, extending from the cervical vertebræ to the sacrum. After a few hours, he was seized with paraplegia, and incontinence of urine, and fever; and he died while the physician was talking to him, who had been sent for on the occurrence of the palsy. There was extensive extravasation of blood in the spinal canal, under the membranes of the chest. At the lower part it formed a mass like a bouillie of bullock's blood, in which the substance of the cord could not be distinguished as far as the third dorsal vertebra; and above this, where the cord was entire, it was of a deep colour, and very soft.

Of Deposits between the Membranes of the Cord.

These consist of small thin flakes of

cartilage, or phospate of lime, which form in the cellular membrane between the arachnoid and pia mater. They are often met with where no symptom of spinal disorder has occurred. They are likewise occasionally met with in combination with the most severe. To this subject I shall presently recur; in the meantime, let me give an instance of this deposit complicated with a growth of another kind in the same situation.

Velpeau relates the case of a woman, ætat. 36, who had first some convulsive motions, which soon ceased; then acute pain of the left arm, with headache: the arm became weak, and gradually completely paralytic. She then had convulsive motions of the lower extremities, which also became completely paralytic. The right arm next became painful, and the motion of it was impaired, but not entirely lost. The inferior extremities became œdematous; the inferior half of the thorax, and all the parts below, were completely deprived of sense and motion; and the right arm at last became entirely paralytic. Sloughing of the integuments of the sacrum then took place, and death ensued at rather more than three months from the commencement of the paralysis.

On inspection, there was found between the body of the cord and the arachnoid a tumor, of a reddish-yellow colour; it was about three lines in thickness at the thickest part, and covered the anterior surface of the cord, from the sixth cervical nerve to the third dorsal: the cord was flattened by it. The tumor was of a firm fleshy consistence, and of a yellowish-white colour. On many parts of the arachnoid of the cord, cartilaginous scales were observed.

Of Tumors exterior to the Theca.

There are three preparations in the King's College museum of tumors external to and pressing on the theca. In two of these the morbid deposit looks like tuberculous matter; is oblong, about two inches in length, half an inch in breadth, and a quarter of an inch in thickness. In the third, the tumor is somewhat longer, of a white colour, and half an inch in thickness: it was situated at the upper part of the back; the spinal cord, otherwise healthy, is narrowed through absorption at this part. In each of the three cases, there was more or less complete paraplegia. An interesting case, in which the pressure of a fatty tumor in the vertebral canal had caused the entire absorption of an inch of the cord, leaving the membranes only, is given by Mr. Robarts, in the Medical Gazette, for March 22, 1834. The fatty tumor lay beneath the bony rings of the tenth, eleventh, and twelfth dorsal vertebræ, was about the thickness of the middle finger, and between two and three inches in length.

Aneurism of the aorta is liable, after producing partial absorption of the vertebral column, to press as an external tumor upon the theca. Dr. Abercrombie describes a case, something of this description, in which the arms, for a short period before death, were entirely deprived both of motion and feeling, the head and legs being in constant motion. There is in this case a want of agreement between the part of the spinal marrow softened from inflammation, excited by the carious vertebra, and the parts affected with palsy.

Of Malignant Disease of the Spinal Cord.

A youth, ætat. 14, fell from a window in the second story of a house into the street: his back was bruised, but without fracture; but he afterwards continued to walk, with his body bent forwards. After three years and a half, he was seized with violent pain in the back, thighs, and legs; and a tumor began to form on the lumbar vertebræ, which increased gradually, till it attained to a very great size. The prominent part of it was red; and repeated attacks of hæmorrhage took place from the apex of the tumor. He was then affected with complete paraplegia, incontinence of urine and fæces, and extreme emaciation; and at length died, gradually exhausted, about six years from the accident. On dissection, the tumor was found to consist of a large fungous mass, resembling the medullary substance of the brain, which took its origin from the spinal cord, and had extended itself upwards and downwards from the third dorsal vertebra to the os coccygis. Many of the vertebræ, both dorsal and lumbar, were extensively carious on the posterior part; and some of the lumbar vertebræ had nearly disappeared.—*New London Medical Journal*, 1792.

The plan which I proposed to myself in my pathological lectures, and which hitherto I have traced in outline only, comprehends three objects. One, the simple description of the morbid changes which have been observed in different organs; a second, the examination of the symptoms which attend these changes, and an explanation of the manner in which the two are connected, as cause and effect; a third, the display of those successions of structural alterations, with their groups of attendant symptoms, which constitute the natural families of diseases. It is, indeed, in the more complicated and important organs only, like those now under consideration, that each of these elements of study deserves to be considered separately. In

rgans of this importance, however, there ven remains another, a fourth branch of nquiry, which fully equals in interest the preceding. What, it may be asked, are he groups of symptoms which display hemselves, unattended by any appreciable lteration of structure? What are the liseases of these organs, which are at pre-ent without a morbid anatomy? With vhat additional families of diseases are pains and spasms, palsy and anæsthesia, grouped by nosologists, who can find no esion of the texture of the spinal cord and brain, with which to associate them?

These affections form so large a class as to claim the most attentive study. At present their locality alone is satisfactorily identified; they may possibly, in time, be traced home to sensible changes in the condition of tissues, that our present means are insufficient to discover; or they may always remain as instances of derangement purely functional—examples of the disordered action of healthy structure. Without it be coupled with a knowledge of facts, such as I here advert to, and which I am about to sketch, pathological anatomy, instead of uniformly guiding aright, would as often mislead the medical practitioner; it would form that half knowledge which is proverbially more dangerous than ignorance.

To prove that such disorders exist, I have only to make one or two additional extracts from Dr. Abercrombie's most valuable "Practical and Pathological Researches on the Diseases of the Brain and Spinal Cord."

A medical gentleman, ætat. 30, who had been for several years in the navy, returned home in perfect health, and was living in Edinburgh, when he was observed by his friends to drag his legs awkwardly in walking. He was not himself at first sensible of it, but soon perceived a weakness and want of command over both his legs, which gradually increased to nearly perfect paraplegia. Some time after the affection of the legs took place, he began to lose the power of his arms; and this also increased till he retained in them only a very feeble and unsteady power of motion; they were also frequently seized with convulsive startings, so that any article which he attempted to hold was thrown from him with violence. The legs often started in the same manner, and were thrown about with considerable violence, especially when he attempted to move them while he was sitting up. No disease could be discovered in the bones of the spine, and he was otherwise in good health, until about two years after the commencement of the complaint, when he was seized with phthisis, of which he died in September 1822. Dr. Abercrombie examined the body with the utmost care, and could not discover a vestige of disease either in the brain or spinal cord.

A woman, ætat. 35, was first affected with numbness of the thumb of the left hand, which gradually extended over the whole hand and arm. The limb was thus partially paralytic, and was likewise affected with involuntary motions, exactly resembling those of chorea: this continued several weeks, and then gradually ceased, and the arm recovered its healthy state. Almost immediately after this, the right hand and arm were affected in the same manner, and after some time also got well. The legs then became affected with starting, involuntary twitches, and a feeling in walking as if they would fly from under her to one side. The complaint went on in this manner for some time, and then terminated in complete paraplegia, with retention of urine, requiring the constant use of the catheter. She was now confined to bed for nine months, and died of extensive gangrene of the sacrum and tops of the thighs. For some time before her death she had recovered the action of the bladder.

No disease could be discovered in the brain or spinal cord, except that the cauda equina was of a very dark colour, as if it had been soaked in venous blood, and there was some bloody fluid round it.

Dr. Abercrombie gives several parallel cases to the preceding, where death ensued; and others, bearing a strong analogy to them, in which the patients recovered.

The classes of diseases which are to be grouped under this head, "as genera of diseases of the spinal cord and medulla oblongata, unattended with any discernible change in the structure of these organs," are the following:—

1. *Chorea*, to which disease each of the two instances I have quoted display an affinity. It is evident that a step is made towards explaining the phenomena of this disease, by separating the functions of the double cord, which originates pairs of nerves, from those of the hemispherical masses of the enkephalon; the former part containing the organs, or forming the sources, of sensation, volition, and the simple impulse which connects them; the latter being the organs in which the sensations excite apprehension, reflection, and desire; and from which the deliberate impulse to action is, in return, derived.

In chorea the former parts are preternaturally irritable. Common sensation, in this case, telling upon the irritable cord, causes the voluntary nerves to stimulate the muscles forcibly and uncontrollably; this effect (consistently with the hypothesis) is heightened when a deliberative impulse comes down from the brain, to

motive the will to energize. I recollect the instance of a lady who was affected with chorea: when she kept herself quiet and composed, there was but little jactitation; but when, happening at dinner to drink wine with any one, her brain sent an impulse to the spinal cord to determine one gentle action of the muscles of the neck; the cerebral mandate found the segments of the spinal cord exquisitely irritable, and off parted a thousand impulses among all the muscles, which made her nod for a minute, in every direction, with astonishing rapidity, omitting, however, generally, the right one.

2. Tetanus and trismus evidently have their seat in the spinal marrow and medulla oblongata. After wounds of tendinous and ligamentous parts, these affections follow in a small proportion of cases. Those so affected are persons in whom the spinal cord is unusually sensitive. In the museum of St. Thomas's Hospital, Mr. Green informed me that there are two specimens of the spinal cord, the membranes of which are studded with little cartilaginous and earthy flakes, taken from patients who died of tetanus. These small deposits did not, it is to be presumed, produce the tetanus, but they probably had made the spinal cord preternaturally irritable. In general, no morbid appearances are found in the spine after death from tetanus.

3. Hydrophobia is certainly nearly allied to tetanus, but it is differently produced,—not by a particular kind of wound, but through the introduction of a specific animal poison; it is further characterized by the acute morbid sensibility which attends it, by the spasms being clonic, and affecting the respiratory muscles alone; principally those of the glottis. It is a pity that, in these fearful cases, medical men content themselves with trying over and over again the practice which experience has proved to be inert. There certainly should be formed in London a board of medical men, for the express purpose of examining into this disease, and part of some hospital should be appropriated to the reception of hydrophobic cases. The opportunities of study being thus concentrated, it is conceivable that in time some curative method might be found which would control the disease.

In human beings, the experiments which at present most deserve repeating, or trying, are—cauterizing the cicatrix, and opening the larynx freely (to neutralize the frightful and exhausting laryngeal spasm), in combination with the use of the most powerful sedatives; or the injection of water into the veins, in combination with abstraction of blood. *Upon rabid dogs*, the latter experiment of Magendie certainly should be repeated; and Mr. Sewell's marvellous experiment (made by him in tetanus) might be tried. Mr. Sewell's experiment was this:—A horse, suffering from a severe attack of tetanus and locked-jaw, the mouth being too firmly closed to admit the introduction of either food or medicine, was inoculated on the fleshy part of the shoulder with an arrow-point coated with the wourali poison. In ten minutes apparent death was produced. Artificial respiration was immediately commenced, and kept up about four hours, when reanimation took place: the animal rose up, apparently perfectly recovered, and eagerly partook of corn and hay:—with which he unluckily was too abundantly supplied during the night. The consequence was over-distention of the stomach, of which the animal died the following day, without the slightest recurrence of tetanic symptoms.

The local congestion, or inflammatory appearances, which are discovered after death from hydrophobia, are singularly capricious, and have evidently been results of the disturbance of the nervous influence, not causes of the disease or of its symptoms.

4. The varieties of convulsive attacks of infants—spasms of the hands and feet—spasm of the glottis, characterized by the crowing inspiration which attends its departure—spasmodic tension of the back and neck,—are clearly results of irritation of the spinal cord and medulla oblongata. Great discrimination is required to distinguish when these attacks flow from irritation alone, and are to be so relieved; or indicate vascular action, and a different treatment.

5. There are classes of affections which are called neuralgic (acute local pain in a joint may be of this nature), which may be caused by spinal irritation. A patient in St. Bartholomew's Hospital requested, after years of painful affection of the knee, to have the leg amputated: the operation was done, but the pain was not removed. On her death, at some interval afterwards, the spinal cord was examined. The posterior surface of the cord was found covered with flakes of cartilaginous deposit.

6. Finally, there is much in hysteria to shew that the central organs of the nervous system are occasionally implicated in its production. Dr. Abercrombie evidently inclines to this opinion, which has found advocates in more than one useful practical writer of the present day.

ON CLUB-FOOT.

By Philip M. Lyons, M.B. A.M.

Physician-Accoucheur to the Brighton Lying-in Institution, &c.; late one of the Physicians to the Brighton General Dispensary.

[Concluded from p. 474.]

I had purposed to inquire into the pathological relations of reel-foot, both as to cause and effect; but as I find I have already extended this paper to almost too great a length, I shall proceed to relate the cases I have already alluded to as illustrating the mode of treatment which appears to me most desirable, as combining great facility with comparatively short confinement and little suffering on the part of the patient, while on that of the surgeon it requires common manual dexterity, with that degree of anatomical knowledge devoid of which he were unworthy of a place in his profession.

John Callaghan, æt. 10, 62, Nottingham-Street, Brighton, was recommended to my care by Major Stewart, one of the governors of our institution, in July 1831, on account of a pair of club-feet. Having twice examined them, I stated it as my conviction that one or both feet might be restored to their natural shape; and on the 6th of August had casts taken from the limbs. He was one of six children, all perfect except himself; both feet were inverted at birth, and the midwife who attended his mother having pronounced his complaint incurable, no pains were taken to remedy the defect until he was two years old, when the inversion was perceived to be considerably increased by any attempt to place him on his feet. His father being in Salisbury at the time, carried him to a surgeon there, who braced down the left foot, to what, from the description given of it, appears to have been an iron sandal, armed with straps and buckles. This the child wore for three weeks, and during that period the limb appeared to improve; but the parents leaving the town, and the straps being broken, the shoe was laid aside. From this time he was unable to walk, or even stand alone, until four years of age, though both his health and appetite were extremely good, and he did not seem to suffer from any debility of back or loins. His first pair of shoes were put on when he was six years old, and he was enabled shortly after to accompany his parents on foot to the extent of five miles a-day, their employment, as hawkers, compelling him to do so. This life he continued until a year and a half ago, when, on the decease of his father, his mother settled in Brighton. Present state:—General appearance that of a strong stout-built boy, his legs excepted, which are very much emaciated, the circumference of each leg, about an inch and a half below the patella, being $7\frac{5}{8}$ inches, with hardly a trace of muscle. When standing *at ease*, the base of the metatarsal bone of the little toe supports the right limb, while the left one rests on the mere point and the whole outer side of that bone. These, with the metatarsal and phalangal bones of the other toes, have their apices turned towards those of the opposite foot, while their bases, being twisted on themselves, are set at right angles with the tibia; thus the metatarsal and phalangal portion of each foot appears to overlap the other, their coronal surface presenting an anterior, while their plantar assumes a posterior aspect. In progression he enjoys no voluntary power over his lower joints, the hips excepted; he therefore advances with a waving kind of motion, which is caused by the heads of the thigh-bones being rolled outwards and backwards when he attempts to advance. The flexor muscles of the leg at the same time contract powerfully; but as they are thrown out of their line, their tendency is to draw the toes upwards and inwards towards the ankle, thus thrusting the basilar extremities of the outermost metatarsal bones from their connexion with the ossa cuboidea, making these points the fulcrum of each foot, and consequently of the entire body, while they render the foot a more perfect club in appearance. The consequence of this is, that the cutaneous and muscular coverings of these parts have become enlarged, thickened, and indurated, from constant pressure, and assume the appearance of a false heel. On a more careful examination of the right foot, I found the tibia apparently twisted to a considerable extent, but not really so; the external malleolus being directly perpendicular to the base of the external metatarsal bone, while the internal ankle cannot be discovered. The superior portion of the head of the astraga-

lus is pushed downwards and forwards, with a slight inclination outwards. The calcaneum, with the os cuboides, is drawn upwards and backwards against the posterior surface of the tibia, while the ossa naviculare and cuneiformia, with the metatarsal bones, appeared at right angles with, but below, the tibia, as has been already described. In the left foot was a deformity of a similar character, but not to the same extent; the false heel of the right being double the size of that of the left, and the space between the great toe and internal malleolus a third less than in the other; consequently, the heel of the latter is much more perceptible, and nearer its proper situation. When he makes the slightest motion with either foot, the abductor pollicis is brought most powerfully into play, and so completely separates the great toe from the others as to give the intermediate space the appearance of an expanded crab's claw.

August 10, 1831, I procured the necessary apparatus, consisting of some very soft tow, two yards of yard-wide calico split into nine lengths, and rolled into two firm rollers; also two long straight leg-splints, and a foot-board for each limb. The leg-splints were made to extend from half-way up the thigh to a little below the foot; the sole-board was somewhat longer and broader than the foot, rounded at one extremity and square at the other. I commenced by softening the feet in water, and extending them between my hands as much as could be done without causing pain: to aid this, the foot was well rubbed with the hand moistened with sweet-oil, from which some advantage was evidently derived. The roller was now applied in the figure-of-eight fashion, and, the foot being completely enfolded in the bandage, the angle between the internal malleolus and great toe was filled with padding: the roller being then drawn with a firm pressure over both padding and false heel, was made as tight as could be comfortably borne. The foot and ankle being once more covered with a layer of bandage, the foot-splint was placed beneath the roll, to which it was bound, and then a leg-splint fixed along the inside of the limb. I now found that the foot had allowed of a very slight degree of extension, to secure which I loosely bandaged another splint on the outside.

From this time they were opened every other day, and given each three-quarters of an hour's gradual extension, care being taken each time to draw the bandage tighter, and to bind the foot more firmly against the inner splint.

At the end of ten days the improvement in the left foot was perceptible to every one, the great toe being brought nearly parallel to the inner edge of the patella. I now commenced my endeavours to flex the joint, first by moulding it, and then by bringing the foot-board as near to a perpendicular as the feelings of my patient would permit; this I accomplished in a dozen visits, carefully observing each time to push the pulley of the astragalus upwards, backwards, and inwards, and the base of the metatarsal bone directly inwards. To keep these in their places, a piece of sheet-lead, adapted to the size of the projection, and lined with padding, was bound on each prominence. The effect of this gradual compression was not only to aid in replacing those protrusions, but also in causing an absorption of the callous and thickened integuments, without exciting ulceration.

Sept. 8th.—The left leg is restored to its proper shape, but the weakness of the extending portion of its muscular and ligamentous structure renders it incapable of retaining that shape unless it be supported by some mechanical contrivance, although the muscles of the leg and calf are becoming remarkably developed. I therefore had made for him (as recommended by Dr. Harrison, in his work on Spinal Curvature) an iron plate, which should run along the inner side of the foot, with a horizontal one attached, and extending under the sole of the shoe, to which it was screwed; it had also a flat rod proceeding along the inside of the limb, as high as the centre of the thigh, and provided with two joints, one to correspond to the knee, the other to the ankle. Attached to this was a plain flat-heeled boot, which was fastened in front by means of buckles and straps brought from certain points, by means of which the pressure on the irregular prominences might be very much increased.

After a few days' trial, I found that the resistance being altogether from the inside, the foot gradually swerved to the outer, and that nothing but a similar plate in that direction would keep the limb in its proper position. The right foot, which had not been handled by

any one before me, and which, consequently, was considerably more *fixed* than the other, at first appeared inclined to resist extension; but having overcome this difficulty in the course of two months, I began to bend it, when it became necessary to apply strong and continued pressure with the thumbs to the pulley of the astragalus, which was at last restored to its proper cavity. The foot was now rendered capable of being placed in a boot, similar to that last described, and secured in an iron frame, which consisted of a full-sized flat sole-plate screwed on the bottom of the boot: to this were attached two side-plates, each extending from one extremity to the other, and rising so high at the sides as to be almost equal with the ankle behind, and a little above the metatarso-phalangal articulation in front. From each of these plates extends a flat steel rod, passing up two-thirds of the thigh on the inside, and to the hip-joint on the outer. The inner one is provided with two joints, one to correspond to the ankle, the other to the knee; to these the outer one adds a third at the hip, to which is attached an oval concave plate for the great trochanter to lie in; this shield is pierced with holes, and has a button on its outer side, that it may be the more easily padded, and in order that a belt, which is secured round the waist, may be attached to it.

Dec. 11th.—The boots and irons being finished and padded, they were placed on the feet, and found to fit comfortably. Orders were then given that he be not allowed to leave the house until his feet became accustomed to them.

16th.—This evening he walked a distance of 800 yards, and found his only difficulty lay in not knowing how to raise his feet in progression.

17th.—Was able to come to the Lying-in Institution, a distance of some hundred yards, with a very firm and steady step. The right foot is perfectly straight, and flat in the shoe; but the metatarso-phalangal articulation of the great toe of the left one projects considerably upwards and inwards. In order to remedy this defect, two longitudinal slits were made horizontally in the inside plate of the instrument: one of these was placed directly parallel to, and opposite, the metatarso-phalangal articulation of the great toe; the other about three-eighths of an inch above, and two inches behind it; a third, in the outer plate, occupied the space midway between both. A strap then passed through those slits and over the foot, was drawn tight, and the ends buckled together; by this means all parts of the foot were kept equally pressed down in the shoe. The same apparatus was also necessary at a subsequent period in Triller's case.

Shortly after the above notes were completed, I ceased to attend this boy, partly from his engaging more of my time than I could spare from my other avocations, and partly because, as soon as he was released from his temporary and necessary confinement, he could not be kept under control by myself or his mother. He was therefore left completely to his own management, his instruments broken or dashed out, and his limbs allowed to assume what shape they might. In spite of all these unfavourable circumstances, the limbs are both at this moment strong and serviceable; and when covered with its shoe, &c. the deformity of the right one, which is much the worst, is scarcely noticeable.

During the whole of this boy's confinement he did not require any species of medicine, with the exception of a single dose of rhubarb and magnesia, in consequence of a slight diarrhœa, though his food during a large part of that time was extremely bad. The only difficulty I had to encounter in the whole course of my treatment was his inability to bear pressure on the metatarso-phalangal articulations of the great toes—an inconvenience which I was enabled to remedy by placing small soft pads on either side of the articulation, and thus removing the pressure from it. Each of his legs had increased a full inch from the commencement to the termination of the treatment.

Case II.—George Triller, son of a stucco-plasterer in the employment of Mr. Wilks, the architect, ætat. 9, one of twins, the first a breechling, and still-born. The second, the subject of these notes, came into the world naturally. Immediately after birth, his feet were perceived to be considerably inverted, as much, in his mother's opinion, as they are at this moment. When about twelve days old he was taken to a surgeon, who bandaged them. There being no perceptible improvement at the expiration of a fortnight, and the child's health re-

quiring country air, his parents ceased their attendance. When six months old he was brought to St. George's Hospital, and placed under the care of Mr. Brodie as an extern patient, by whose direction each limb was enveloped in a roller bandage, and had a leg-splint placed on the inside. This mode of treatment was persevered in for six or seven weeks, at the end of which time he was placed under the management of Mr. Callum, then a student of St. George's, and son of the instrument-maker of that name, who resided in Great Queen-Street, Lincoln's Inn. This gentleman strapped the feet with plaister and bandages, and then placed them in machinery, which the child continued to wear for fourteen months; and during this time the limbs appeared to be greatly improved while confined by the instruments, but as soon as they were removed the deformity again became quite perceptible.

At the end of this time the father removed to the country, but continued Mr. Callum's mode of treatment until the boy was four years old, when, in consequence of the inconvenience attendant on the procuring Mr. Callum's apparatus, they ceased to make use of it, and had recourse to the machinery of other persons, lastly of Mr. Revel, St. Martin's Lane, whose instruments caused so much pain, and so abraded the integuments, as to compel the boy to throw them off altogether at the age of seven, since which time he has had nothing more than common shoes on his feet. While he wore instruments his health was always deranged, particularly his bowels, which were constantly hard and costive.

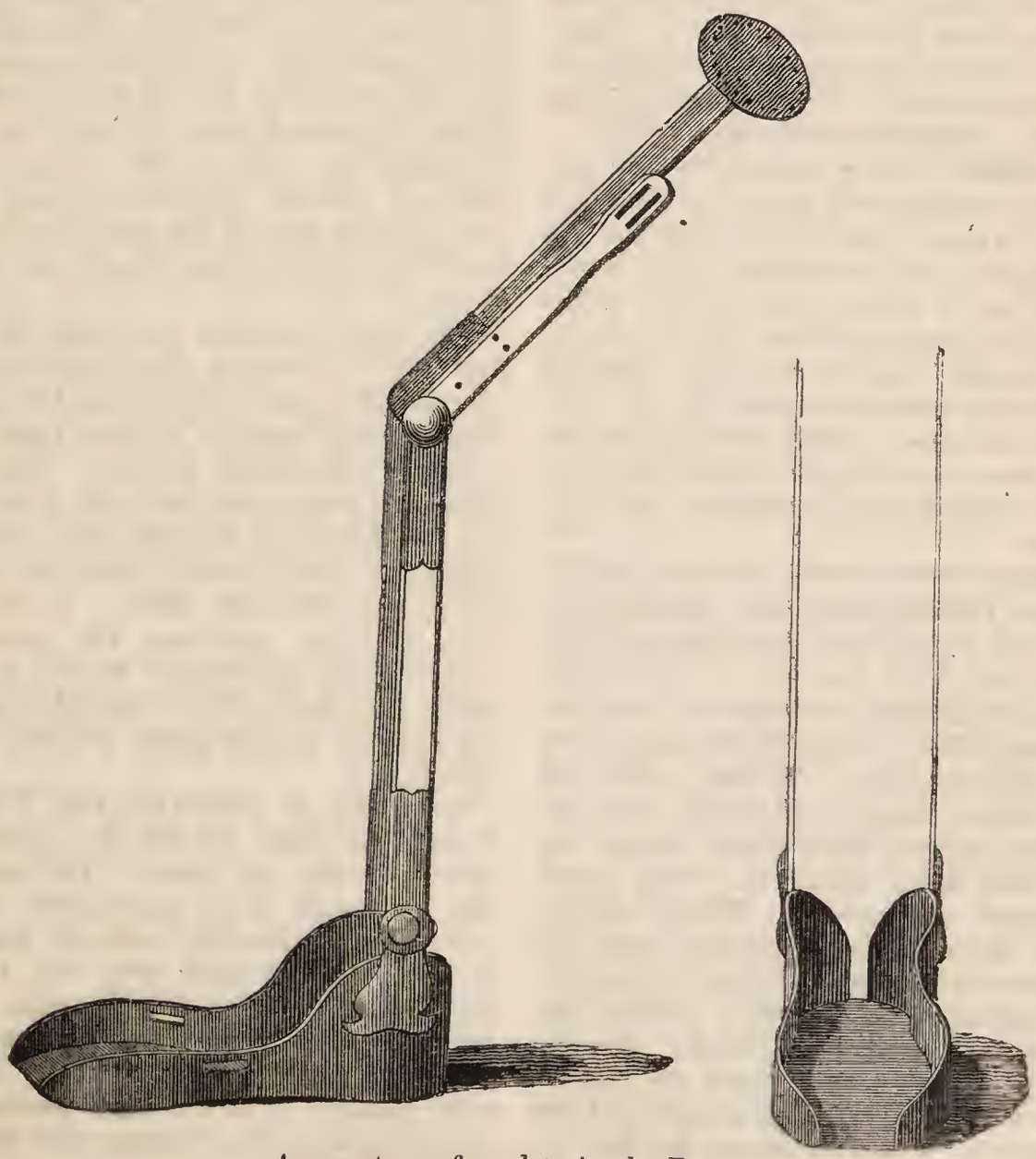
October 10th, 1831.—Present state: general health good, but complains of pain and weakness in his loins when he walks, which he does in the same manner as Callaghan, though he can run extremely fast, and with comparatively less inconvenience. Height three feet nine inches; body well made, and moderately covered with flesh, except his legs and feet, which are very much emaciated and curved. When sitting, or in the recumbent posture, and the condyles of the femora in juxta-position, the phalanges of one foot overlap the metatarsal bones of the other. In running or walking he rotates the thighs inwards, and moves with a waving kind of motion. When he places his foot on the ground, he rests on the external plantar arch of the left foot, nearly through its whole length; this gives a considerable obliquity to the leg, while the arch is much more flattened than in the right limb, and is brought nearly to a right angle with the tibia, whose internal malleolus appears to be inclined forwards to a considerable extent, while the astragalus projects more outwards, and the base of the calcis is drawn more upwards and backwards than in the right one. The foot resting completely on the outer side, the integuments of that part are consequently become very callous, and there is a hard ridge running along the upper surface of the cuboides, forming the outer edge of this unnatural planta. Right leg: the anterior spine appears twisted in such a manner as to give an oblique direction to its anterior inferior triangle, and thus throw the internal malleolus more forwards, and the external one more backwards, than natural, while the head of the astragalus projects directly forwards. The base of the calcis is drawn up by the gastrocnemii, whose tendon is long, tense, and rigid. The flexor muscles of the toes throw the os cuboides and base of the metatarsal bone of little toe into a prominent arch, on the inferior and external portion of which, along with the external part of the same metatarsal bone through its entire length, he seems to rest.

The space between the great toe and one next is greater than natural; the two following are much distorted, particularly that nearest to the little toe, which is completely twisted. The boy possesses some power over the toes, and can incline them towards the internal malleolus, but is unable either to extend the foot, or flex the ankle. In the left foot, also, he possesses the power of bringing the phalanges nearer to the tibia; and thus, when he stands, of resting himself on the parts already mentioned.

On trying to extend the foot, I found it could be done but for the resistance offered by the soft parts. The tendons and ligaments were particularly tense and rigid; I therefore ordered them to be well rubbed with olive oil, for at least an hour; after this I again tried extension, and being provided with a nine-yard calico roller, of three inches wide, applied it in the same manner as in Callaghan's case, taking care that in

each fold of the bandage the pressure should come upon the os cuboides. Having attached a foot-board and a side-splint to the inside of the limb, and having filled up every hollow with tow, as in the former case, taking care to keep the great toe, and consequently the whole foot, as nearly parallel with the anterior edge of the perpendicular portion of the foot-board as was possible, without inflicting considerable pain, I observed the same rule at the upper portion of the limb, with respect to the anterior surface of the patella and corresponding edge of the splint. I then proceeded to place another splint on the outside of the limb, but found that a pressure merely to keep it in its place caused such acute pain, from the stretching of the limb which it produced, as to induce me to lay it aside for the present.

On calling the following morning, I was informed he had suffered no inconvenience from the novelty of his situation until evening, when he said his ankles and toes felt stiff; but on being put to bed went to rest, and though he cried occasionally in his sleep, did not, on being awakened, complain of suffering pain. The limbs had been unbandaged previous to my arrival, and well rubbed with oil. I proceeded to examine if any part had been fretted by the splints or bandage, and found that the metatarso-phalangal articulation was the only part which had been in the slightest degree irritated; but here a slight vesicle was raised. As this prominence had caused me some annoyance in Callaghan's case, I determined to try what effect would be produced by enveloping the entire toe in a pledget of soft lint spread with spermaceti, and sufficiently thick to remove all pressure from the joint. I then used gradual extension for half an hour with each foot, and enwrapped them in the bandages as before, slightly increasing the pressure. This mode of treatment I continued for a week, when, having



Apparatus referred to in the Paper.

brought the limb into a more direct line, I put a splint on the outside of the right leg, the left one being still too much curved to admit of one. After this I proceeded to apply pressure with my thumbs to each unnatural prominence, particularly of the os cuboides and astragalus, directing each bone at the same time into the line of its proper situation. To aid me in those endeavours I made use of the warm bath, and pressure directly on the part by means of a piece of sheet-lead fitted to it, lined with wadding, and over which the bandage was tightly drawn.

Saturday, Oct. 22d.—The left foot being considerably more capable of extension, I have put a splint on the outside of the limb. He complains sometimes of cramps in the legs, and, as I am informed, suffers most from it at night, the pain being sufficient on some occasions to make him call out in his sleep, though not to awaken him.

Dec. 26.—After some delay on the part of the trades-people I have been able to get a boot finished for his right foot, which is now capable of being put into one without pain: the ankle-joint can also be flexed to a certain extent.

Jan. 6th.—The second boot was put on this evening, both exactly similar to those of Callaghan. These being secured, he was enabled to stand erect for some minutes, by the aid of his stick, and with the assistance of a pair of crutches to move some steps. He has considerable command over his joints.

8th.—He can stand alone, with his toes everted, and without any support, but cannot advance, recede, or turn, without his crutches; but with their assistance can make all these movements, though very slowly, and complains of pain and weakness in the loins after he has used a little exercise. The feet lie fairly in the boots, and do not experience the slightest pain on pressure, except on their being first introduced. During the whole length of his confinement his mother has not found it necessary to give a dozen doses of syrup of poppies in ʒij. doses, while formerly, during the time he was under the care of Callum, Revel, &c. she has administered to him to the extent of ʒij. of this medicine within the 24 hours, without its producing on him the slightest soporific effect.

To these two cases I shall briefly add one more, with which I purpose concluding this essay; as, though it was not brought to a termination, I think it affords satisfactory evidence of the reasonableness of the opinions advocated in the preceding part of this memoir, and of the success which may rationally be expected, even at very advanced periods, from a steady perseverance in the mode of treatment pursued in the cases of Callaghan and Triller.

Being in Dublin about the 30th of last June, I was requested to see and give an opinion as to the curability of a young girl, æt. 14, the daughter of Mr. Holmes, a respectable shoemaker, in Castle Street. On examining the feet, I found she was affected with a double congenital club foot, of a character very similar to that of Triller, but which, from being taken in hands at a very early period, being subsequently fitted with shoes according to a plan of her father, and perhaps from a peculiarity in her constitution, or *in the original formation of the muscles and ligaments of her lower extremities*, were capable of being more easily and rapidly restored to a right line with the limb than in either of the other two children. I therefore commenced a similar mode of treatment with her, with the hope that if I were enabled to accomplish the rectification of the deformity to a certain extent, some person might be found who would undertake the completion of the task. With the addition of the nightly use of the knee bath, I had, at the expiration of ten days, the satisfaction of seeing both feet brought to a right line with their respective limbs. I was then necessitated to leave Dublin and return home instantly, and since that time have not heard any thing farther concerning my patient, nor have had any opportunity of making particular inquiries.

Note.—Since the completion of this essay, which has been unavoidably withheld from publication for a period of several months, the medical world have, through the medium of the various professional journals, become generally acquainted with the opinions and treatment advocated by MM. Stroemeyer and Dupuytren; but as it is not the object of the *present* paper to enter into the consideration of their advantages and disadvantages, it is sufficient for the present merely to have noticed them. In conclusion, the author has recently had an opportunity of examining a beautifully executed instrument, made by Mr.

Tailor, of the Strand, which, with that adaptation to particular cases always necessary in such instruments, is a most admirable substitute for his (the author's) more rude contrivance.

Brighton, Dec. 28, 1834.

ON THE ANTERIOR MEMBRANE OF THE CORNEA.

By Richard Middlemore,
Lecturer on Diseases of the Eye at the Birmingham Eye Infirmary.

In the Medical Gazette for February 1834, it is stated by Mr. Wallace that the cornea is not covered by the conjunctiva, and that the latter membrane terminates at the corneo-sclerotic junction*. It is also asserted that the corneal covering "resembles the cuticle," and that it overlaps, and is inserted into, that portion of the conjunctiva immediately surrounding the cornea. The author's reasons for arriving at the preceding conclusions are stated to be chiefly derived from carefully conducted dissections; from, in fact, the very method which has long since been employed, and, as I think, successfully employed, to correct the errors Mr. Wallace attempts to renew. This mode of reviving exploded doctrines is, I fear, too much practised by writers of the present day, without an adequate examination of the grounds on which their former refutation rested.

Writers on diseases of the eye usually consider the affections of the cornea as they occur—1st, in its conjunctival covering; 2d, its lamellar and connecting cellular texture; and 3d, its serous lining. This is the plan adopted by Mr. Wardrop†, and all succeeding systematic writers on the pathology of the eye.

An important part of the pathology of the cornea has been founded and received under an impression that it was covered externally by a continuation of the membrane which covers the other part of the outward surface of the eye; and it becomes us to hesitate ere we consent to renounce this opinion, approved and confirmed as it has been by the labour and research of so many distinguished anatomists*.

I shall now attempt to condense a small portion of the mass of evidence which may be brought forward to prove that the conjunctiva, in a modified form (suited to the part it covers), is continued over the cornea.

1. If the eye of an ox (I select the eye of this animal simply because it is large, and is precisely the same as the human eye, as respects the point at issue) be kept for a few days, so that putrefaction may have *commenced*, the conjunctiva may, by a careful dissection, be removed from the whole anterior surface of the eye; but it will not certainly be found equally dense, &c. throughout its whole extent, though it will still be ascertained to be *a continuous membrane*.

2. For my present occasion I do not lay much stress upon the removal of an entire pellicle from the surface of the eye in those animals which "cast their skin" at stated periods; for at best this circumstance can do little more than prove what was long since stated by Porterfield (op. cit. vol. i. p. 63), namely, that the cuticle is extended not only over the cornea, but over the whole anterior surface of the eye.

3. When the surface of the eye is in-

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* It is stated by the learned Porterfield, that "the conjunctiva is extended over the whole front part of the globe, *till its termination in the edge of the sclerotica adjoining to the cornea*, where, of consequence, it forms a large hole for the transparent cornea, through which the iris and pupil are seen."—A Treatise on the Eye, and the Manner and Phenomena of Vision, chap. 2, sec. 2, page 60.

† The Morbid Anatomy of the Human Eye, vol. i. page 3. This mode of discussing the diseases of the cornea, by arranging them according to a correct anatomical division of the textures which enter into its composition, would *appear* (I cannot say more than this), to have originated with the philosophical Leeuwenhoek. At page 316 of his "Arcana Naturæ Detecta," he says, "atque etiam in tunica cornea oculorum, quam antea examinans constare censui ex tribus distinctis membranis coacervatis."

* "Ipsa autem conjunctiva non hic subsistit, sed porro per corneam, sed pellucidissima nunc facta producitur."—Descriptio Anatomica Oculi Humani iconibus illustrata; auctore Johanne Gottfried Zinn. Gottingen, 1755, p. 24.

"Firmior cum cornea, quam cum albuginea tunica adnata cohæret. Licet intimus igitur nexus utramque intercedat tunicam, cultro tamen et maceratione conjunctivam a cornea separari posse, sæpissime expertus sum." Clemens in Scriptores Ophthalmologici Minores, vol. i. p. 105.

"Parvenue sur le globe de l'œil, la conjonctive adhère lâchement à la sclérotique. Sur la cornée, elle prend plus de ténuité et une adhérence beaucoup plus forte, mais que peut être detruite par la macération."—Traité d'Anatomie Descriptive; par Xav. Bichat, tom. ii. p. 425.

"There is a pellicle, or exceedingly thin coat, which, by maceration, can be taken off from the surface of the cornea. This is the conjunctiva continued over it. In the fœtus calf I have forced the blood in the vessels of the conjunctiva into the vessels passing over the surface of the cornea."—The Anatomy and Physiology of the Human Body, by John and Charles Bell. London, 1823. Vol. iii. p. 31.

flamed for a long period, and particularly if that organ be exposed to some prolonged souree of irritation, vessels sometimes pass over the cornea, and are found to be developed in its external covering, and to be continuous with tubes which ramify in the texture of the sclerotic conjunctiva. Pustules occasionally form near to, or at, the margin of the cornea, and by their increase—by the augmentation of their fluid contents—they elevate the tunic which covers them, which is then seen to be a continuous membrane covering the whole of the pustule—that is, the part which is placed upon the selerotica, and the other portion which is situated upon the cornea. The vessels of the conjunctiva are sometimes extended upon the cornea, for the purpose of repairing a superficial ulcer of its texture. It may be said that these vessels are formed in a sort of lymph traek, and that they are merely so developed for a temporary occasion; but as they are observed to be continuations of the same vessels which are noticed within the sclerotic conjunctiva, I apprehend that if that membrane really terminated at the corneo-selerotic junction, these vessels would terminate there also, and would not, if I may be allowed the expression, push through the mucous membrane at the point of its attachment. The disease termed pterygium is a morbid production developed in the subconjunctival cellular membrane. It is always of a triangular figure; and this circumstanee has been found to depend on the gradually inereasing strictness of adhesion whieh subsists between the conjunetiva and sclerotie, as they approaeh the eornea*. This triangular figure is still preserved as the diseased production passes over the eornea, though not so perfeetly as when plaeed upon the selerotiea; and the surface of the pterygium is eovered with conjunetiva wherever situated. The slowness of its growth affords a favourable means of securing the gradual elevation of the conjunetival covering of the eornea; and that this actually takes place,—that both the sclerotie and corneal portions of the conjunetiva are raised by the pterygial growth,—is, in my opinion, a most unquestionable faet. I have onee or twiee witnessed an arid state of the conjunetiva, in whieh that membrane has been shrivelled, of a pale brown appearance, partially detached from its natural connexions, and quite dry, having lost its secreting property. In this condition of disease, the anterior membrane of the cornea is affected in the same manner as the immediately surrounding parts; and the connexion of texture—the continuity of surface—is then very distinctly marked. Similar states of disease have been notieed by Travers, by Mackenzie, and also by Wardrop.

4. The effect of various chemical substances upon the external part of the eye appears to be pretty much the same upon every portion of its surface. If, for instance, a weak solution of lime be applied to the eye for a short period, so as to lead to any appreciable change, the same alteration, whatever may be its extent, is visible on every part to which the slightly caustic matter has been applied.

In making the preceding statements, I do not mean to say that the conjunctival eovering of the cornea exhibits, in perfeet purity of type, all the eharacters of mueous membrane; on the contrary, I am eonfident that the qualities of such membrane are mueh modified, and that it may with perfect propriety be elassed (like the part it covers), among the anomalous tissues. But I am desirous of stating my belief, that the surface of the eye is covered by *a perfectly continuous membrane.*

Fearful of encroaching upon your limits, I will not adduce the mass of evidenee I am prepared to add to that I have already advanced in support of the latter statement.

Mr. Wallaee asserts, that—1, "were the anterior membrane (of the cornea) a continuation of the conjunctiva, the ehemosis in severe catarrhal (?) ophthalmia would not stop at the edge of the cornea, but would proceed over its surfaee." I apprehend this will depend on the degree of firmness of the adhesion subsisting between these parts. When those effused matters whieh constitute ehemosis elevate the sclerotie eonjunctiva, it readily yields, and is raised above, and overlaps the edge of the eornea, in a way which tends to prevent the elevation of the membrane which covers it. 2, "Were it (the anterior membrane of the eornea), a mueous membrane, the mueus seereted would impede vision." I am only anxious to

* See, upon this subject, the opinions of Scarpa, Wardrop, Demours, and almost every modern writer on ophthalmology.

assert that the anterior surface of the eye is covered by *a continuous membrane*, which is emphatically denied by Mr. Wallace.

The concluding sentence in Mr. W.'s communication is peculiarly unfortunate for his argument. Should he ever visit this part of the country, I shall be happy to convince him that what are usually termed pustules may not only form upon the cornea, but at almost any part of the surface of the eye-ball.

TREATMENT OF RINGWORM WITH PYROLIGNEOUS ACID.

To the Editor of the Medical Gazette.

SIR,

ABOVE a year ago I received the enclosed circular letter from Mr. A. L. Wigan, of Brighton; and I have since made, as I supposed, a fair trial of the remedy for ring-worm which he recommends. I have, in common with others, been disappointed in the result, and I think it due to Mr. Wigan to express my belief that the acid employed was not of the strength he recommends.

The disorder in question has been so obstinate, in some notable cases at public establishments, and is often so perplexing in private families, that it seems to me worth while to make known a method of cure which is said to have proved so successful.

Mr. Wigan has, it may be said, already done so, by circulating among the members of the profession his printed letter; but as this failed to convey his instructions with sufficient precision, I would request that you publish either the whole or a part, as you think more eligible, of his former communication, and of that which he now particularly addresses to myself. I have the honour to be, sir,

Your obedient humble servant,

B. G. BABINGTON.

16, Aldermanbury, Jan. 2, 1835.

CIRCULAR.

"SIR,—The disappointment and annoyance so generally experienced in the treatment of ringworm, induce me to believe that the suggestion of a safe, speedy, effectual (and I believe *new*) remedy, will be acceptable to the profession, although the form of this communication be unusual.

* * * *

"It would seem superfluous to say that before any attempt is made, the disease should first be strictly identified; but I am constantly seeing cases where, from a too cursory inspection, or from a too ready acquieseence in the report of the friends, continued disappointment has arisen. Several other eruptions are occasionally confounded with it by men perfectly capable of distinguishing them, if they would give themselves the trouble of an attentive examination, but this should invariably be done in a strong light, and *with a very powerful lens;* an examination with the naked eye is worth nothing at all.

"Ringworm is not only frequently mistaken for, but is often actually complicated with, porrigo, psoriasis guttata, and many other tettery eruptions; but I believe it is never modified by them. The two eruptions may still be distinguished, even when mixed together. The additional diseases may be cured by their respective remedies, without advancing the cure of the original malady a single step. Nay, the specific remedy for the others will often aggravate ringworm; although cases sometimes occur in which the means adopted for the cure of the latter entirely dissipate the former.

"The most frequent combination is ringworm and porrigo favosa, which is easily and invariably cured by a week's steady use of the ung. hydr. precip. albi, freely applied at bed-time: but it is occasionally necessary to conjoin therewith a mild alterative course, such as a grain of calomel and ten of chalk every night.

* * * *

"In the majority of cases the disease is obvious enough. Whether simple, then, or complicated, I will suppose it clearly ascertained, and its concomitants, if any, entirely removed; and proceed to speak of the remedy which I have found so extraordinarily beneficial.

* * * *

"In the beginning of the treatment it very much simplifies the affair to insist, in the first instance, on shaving the head—for the skin is contaminated long before the disease is cognizable. This is, however, sometimes very obnoxious to the patient or friends, and there are cases in which it may be omitted—of which I will speak hereafter.

"The head, then, being shaven, and time given for any slight cut of the razor to be healed, I apply all over it (by means of a short soft shaving brush) the strong pyroligneous acid prepared by Beaufoy, diluted with one-third of its volume of

water--keeping the head thoroughly wet with it for the space of two minutes. Some slight and very transient pain is given at the spots, *which are immediately rendered visible, though they could not previously be distinguished,*—they become instantly of a very bright red, while the healthy scalp is not at all affected, except in some rare cases, where the skin, being exceedingly thin and delicate, it is advisable to use the acid in a more dilute state.

"The complete detcetion of every infected spot makes our further progress easy and satisfactory, as we know the extent of the disease.

"I now continue to *soak* the affected parts with fresh applications of the acid in its full strength for a quarter of an hour; and if this be done carefully and steadily, a second or third application (with intervals of three or four days) will always complete the cure. Once is sometimes sufficient, but I do not like to trust to it.

"A thiek scab is gencrally the result of this process, and this should not be hastily removed. At the end of a week or ten days it is seen gradually rising from the scalp, supported on the new hair which grows rapidly under it, and soon raises it high enough to admit a pair of scissars, when the whole is cut off, and the skin shews clear and healthy. Should this not be the case, which can very rarely occur, the same process must be repeated; but I again urge that *the examination be always made by the lens.*

"The most embarrassing cases are those wherein various applications have been already tried, many of which being of an irritating nature, produce an appearance not 'in the books.'

"If on the first examination (after the test of the acid) there be found only a single spot, and of slight extent, and if (as in the case of a school) it be of importanee to prevent even the *possibility* of communicating the disease to others, it is better at once to touch the surface with the kali purum so slightly as to give no pain. This is effectual. A slight eschar is formed, and when the slough separates, no hair appears for some time; but there is no fear of its being re-established in a few months, and in the meantime all apprehension is at an end.

"*The important thing is, however, in all cases, that the surgeon should do all this with his own hands*—the only mode of knowing whether the failure or delay arise from the inefficiency of the remedy or from the imperfect mode of applying it. No dependence whatever is to be placed on the punctuality of the child's friends in this respect.

"Ringworm on any part of the body except the head *never* requires more than a single application of the acid.

"When the hair is very thin, and the disease of recent origin, it is unnecessary to shave the head. The acid must still, however, be first applied as a detector.

"I have the honour to be, sir,
"Your obedient servant,
"A. L. Wigan.

"Brighton, Nov. 10, 1833."

To Dr. Babington.

My Dear Sir,

Many applications have been made to me by London practitioners, to know if I still retain my good opinion of pyroligneous acid, as a remedy for ringworm, and asking if any error in the mode of using it can have led to results in their hands so different from those stated in my letter.

Allow me to request the favour of you to give publicity to my answer, in any mode you may think best adapted to the object.

I would premise that the hasty letter I addressed to the leading members of the profession, was printed solely to save myself the trouble of answering so many applicants; but owing to some errors of the press (such, for instance, as the omission of *favosa* after *porrigo*) it failed of giving a clear idea of my meaning.

The main cause of disappointment was, however, my omission to state the absolute strength of the acid employed; as I find that almost all the gentlemen who have addressed me have used it as usually sold to apothecaries—viz. two parts acid and one part water, make the "distilled vinegar."

Now that which I use makes a liquid of the same strength, on mixing one part acid and eleven parts water; consequently is just *eight times stronger.* It is no wonder, then, that disappointment has arisen, for the fluid they have used is not strong enough even for the "preliminary test."

The acid is furnished to me by Messrs. Beaufoy, and is called *eleven acid:* but I believe it is sold in all intermediate strengths, down to simple distilled vinegar.

Further experience does but confirm me more and more in the absolute efficacy of the remedy. Whether the local atmosphere of Brighton may aid the cure, I know not; but I can safely as-

sert that I have hitherto met with no case of failure.

It is obvious that this malady may occur in conjunction with constitutional ailments requiring medical aid, and which may modify the appearance of the eruption. I shall take an early opportunity of offering to the public, through some of the medical journals, the results of a very extensive experience in this and analogous diseases, in the conviction of saving much trouble to practitioners who only see such cases in private practice, at intervals which do not allow of drawing accurate inferences—except, indeed, with men who have the advantage of an extraordinary memory.—I am, sir,

Yours very truly,

A. L. Wigan.

30, Oriental Place, Brighton,
Dec. 29, 1834.

INVERSION OF THE UTERUS SUCCESSFULLY TREATED.

To the Editor of the Medical Gazette.

Sir,

As there appears to be some doubt among obstetrical writers as to the practicability of returning an inverted uterus, after the inversion has continued some hours, perhaps the record of the following case may not be without practical utility. Should such be your opinion, you will oblige me by inserting it in your valuable publication.

I am, sir,
Your obedient servant,
W. B. Dickinson.

Macclesfield, Jan. 3, 1835.

On the 24th of December, 1834, about ten o'clock in the morning, I was called upon to see, in consultation with a medical gentleman, Mrs. Bingham, a married woman, aged 30 years, of a very weak and delicate constitution. The account given was, that Mrs. Bingham had been brought to bed of her fourth child, about ten o'clock in the morning of the previous day. Her labour was a natural one, and the placenta was expelled entire, without traction of the funis having been used, and unaccompanied by subsequent hæmorrhage.—During the whole of the day in which her labour occurred, she appeared to be pretty well, except that she had sharp after-pains, which returned about every five minutes till three o'clock in the afternoon, when she became a little easier; but from this time she felt a forcing down, and a continued desire to micturate, till nine o'clock in the morning of the 24th, when a large tumor was protruded from the vagina. When her medical attendant, who was immediately sent for, arrived, he at once discovered that this tumor was the uterus completely inverted.

When I saw her she was in a state of great depression. Her pulse was very frequent and feeble; her face deathly pale; her lips without colour; her eyes half-closed and languid, and her extremities cold. On examination I found the uterus lying externally, inverted, and feeling to the touch rough, elastic, and resisting, and about the size of a new-born infant's head. I could pass my finger round the cervix uteri, and could feel the part which I judged to be the os tincæ, closely drawn up. Though extremely faint, as described, she was not sick, nor was there any sickness at any subsequent period. She had some wine and water given to her; and after exertions continued for more than a quarter of an hour, by pressing the knuckles against the inverted fundus, the uterus was returned within the vagina, but further attempts to reverse the viscus were at this time ineffectual. The woman now became still fainter than before, and the pulse was scarcely perceptible; it was therefore resolved to wait a little, and in the meantime to refer to different authors who had written upon the subject, and to consult our medical friends as to what they conceived would be the best course to pursue.

During this rest, the application of cold wet cloths to the parts was directed, and the internal exhibition of cordials. Upon reference to authors, it appeared to be their general opinion, that after an hour had elapsed from the inversion, the reduction was scarcely possible; but a medical friend, Mr. Fleet, said that the late Mr. Kinder Wood, of Manchester, had returned an inverted uterus after the lapse of two days from the accident; and Dr. Swanwick stated, that he had seen a case of partial inversion reduced after seven days from its occurrence. It was therefore determined to make a second attempt at reversion.

At one o'clock Dr. Swanwick was kind enough to see the patient with the medical attendant and myself. Though still greatly depressed, she had in a slight degree rallied. Previous to a renewed attempt at reduction, a small dose of laudanum, and sp. ammon. aromatic. was given. At first I could only introduce the points of the fingers, well oiled, into the vagina, but by gentle steady efforts the hand was passed, carrying the inverted uterus before it. Pressure with the knuckles was then made upon the fundus, and afterwards the inner surface of the point of the thumb was pressed against the part, till slowly, and almost imperceptibly, the uterus was restored to its natural state. I could distinctly feel the inner surface of the uterus soft and irregular, like the surface of torn flesh, the cavity being not larger than would contain a full-sized orange. The hand was kept in the vagina some time, till the os tincæ contracted to its usual size, after which it was slowly withdrawn, and a tampon, formed of a well oiled silk handkerchief, was cautiously introduced.

No hæmorrhage of consequence occurred during or after the reduction; but upon subsequent examination, the flock bed was found saturated with blood to a considerable extent, which no doubt had been lost during the inversion, and which accounted for the bloodless appearance of the countenance. The pulse at this time was 140 in the minute, but the woman did not seem worse than before the reversion. Nutriment and cordials were ordered to be given, and the most perfect rest enjoined. No bad symptoms ensued, the only discomfort having arisen from headache, and the woman at the date of this communication (January the 3d) is going on in the most satisfactory manner.

That the complete or partial inversion of the uterus took place at, or immediately after, the expulsion of the placenta, there is every reason to believe. The uterus, if such was the case, was inverted twenty-seven hours. If the uterus was inverted by the continuance of after-pains—a most improbable circumstance—it was inverted at least from three o'clock of the afternoon of the 23d of December, or twenty-two hours. In either case the effectual return of the uterus points out the possibility of reduction at a period when it has usually been considered impracticable.

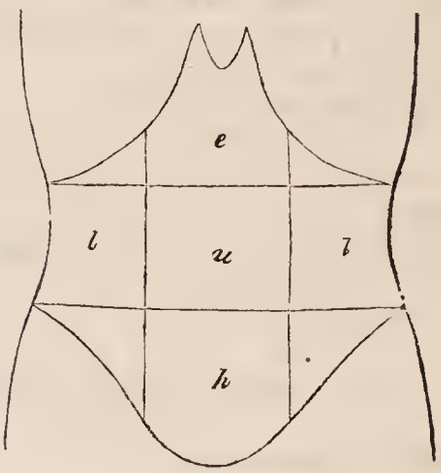
ON PERCUSSION,

AS A MODE OF DISCRIMINATING CERTAIN ABDOMINAL SWELLINGS.

To the Editor of the Medical Gazette.

Sir,

This subject appears to me to deserve more attention from medical practitioners than it at present possesses. In many cases the diagnosis of abdominal swellings is rendered less difficult by the employment of percussion. Taking the following outline of the abdomen as a guide, we will proceed to mention some of the diagnostic marks of certain swellings occurring in its cavity.



e, the epigastric region—*l l*, the two lumbar regions, forming a part of *u*, the umbilical region—*h*, the hypogastric region.

Diagnosis of Non-encysted Ascites by Percussion, the Patient being in the recumbent posture.

In every case of non-encysted ascites which I have either seen examined, or examined myself, percussion produced resonance in some portion of the region *u*, in consequence of the floating intestine. If percussion be made laterally, in the direction of *l l*, the lumbar regions, there will be dulness, in consequence of the gravitation of the fluid. In order to proceed a step further in the diagnosis, we should percuss the lumbar regions, directing the patient to change his or her position, viz. supposing the *right* lumbar region to be dull on percussion, the patient lying on the back, if the patient be directed to lie on the left, the right lumbar region will become resonant in consequence of the fluid gravitating to the left side. If the patient be in the erect posture, dulness will be produced by percussion in *h*, the hypogastric region, in consequence of the gravitation of the fluid,

the level of which may be ascertained by percussing in the direction of *u*, until resonance is obtained. Encysted ascites will of course form an exception to this rule.

Diagnosis of Ovarian Dropsy by Percussion, the Patient being in the recumbent posture.

The sounds produced by percussion in ovarian dropsy, the patient being recumbent, are the reverse of those produced in non-encysted ascites; for there will be dulness in the direction of *u*, occasioned by the tumor (allowing the disease to be somewhat advanced), and resonance in the direction of *l l*, from the situation of the intestine below the ovarian swelling. Similar sounds are produced in pregnancy, so that difficulty arises in distinguishing between ovarian swellings and pregnancy, from percussion alone. Ovarian swelling and ascites may co-exist; in such a case there will be dulness at both *u* and *l*, the former varying with the change of posture.

I am, sir,
Your obedient servant,
C. J. B. ALDIS,
Member of the Royal College of Physicians.

13, Old Burlington-Street,
Jan. 3, 1835.

SUCCESSFUL CASE OF LITHOTRIPSY.

To the Editor of the Medical Gazette.

SIR,

I HAVE read, in your number of the 20th December, a letter from Dr. Arrowsmith, of Coventry, relating an unsuccessful case of lithotrity, wherein he says, "if the various cases in which lithotrity has been, or may be, performed, were detailed from the commencement to the termination, a series of facts of considerable practical value would be obtained; nor could the pages of our medical periodicals be more fitly occupied than in furnishing the grounds for correctly estimating the value of an operation of such great importance."

As I entirely coincide in the opinion expressed above, I am induced to send you the following successful case of *lithotripsy**, performed by the Baron Heurteloup, on a little boy belonging to this Institution, in March last.

George Hunt, aged 6 years and a half, was in the habit of wetting his bed every night, and was also observed to make water very frequently in the day; on which account he was brought to me. I passed a sound, and soon discovered that he had a calculus in his bladder. The child, though rather puny and delicate, was in apparent good health, and suffered very little from his complaint, only a frequent desire to make water, with some pain after voiding it. The urethra being unusually large for a child of his age, it occurred to me that lithotripsy might be tried, and, on the 17th of January last, I consulted Baron Heurteloup as to the practicability of the operation. He examined the boy, and was of opinion that, the stone being small, the operation might be successfully done, and in the most liberal and handsome manner offered gratuitously to perform it. As there was no urgency, the child appearing to suffer so little, the Baron recommended the previous introduction of sounds into the urethra, for several weeks prior to his operating, in order to ascertain its capacity, and to accustom it to the presence of instruments. This was done by the almost daily introduction of elastic gum and metallic bougies, until a steel sound, No. 12, could be introduced with facility. The chief difficulty we had to contend with was in quieting the fears of the child, who, of course, by resistance and struggling, might have rendered the operation very difficult; but this was overcome by a little management: by the frequent introduction of bougies and catheters, and by injecting the bladder with warm water occasionally, the young patient was familiarized with the use of the instruments: he was also naturally of a docile temper.

On the 19th March, Baron Heurteloup performed the operation, in the presence of several medical gentlemen. The stone was seized with great skill and celerity, and with blows of the hammer was broken. The operation was over in about two minutes, and the child did not appear to suffer any thing beyond the fear natural on such an occasion.

The same evening, he passed with his urine much sand, and several minute fragments of the stone. On the following day there was some inflammation

* Baron Heurteloup so calls his operation, in contradistinction to *lithotrity*, which, he says, merely signifies breaking the stone *by perforation*; whereas *lithotripsy* indicates, in a general sense, the *breaking down of the stone*.

and swelling of the *meatus urinarius*, with slight mucous discharge from the urethra, and several fragments of stone were seen sticking within the urethra for about half an inch down the canal: by means of small forceps these were easily extracted. He had slept well, and made no complaint. He continued to pass sand and small fragments until the 25th March, when he complained of a want to make water, but could not void any. On introducing a catheter, it could not be passed beyond four or five inches, a fragment of the calculus being evidently impacted in the canal of the urethra. Baron Heurteloup happened to call very soon after this occurred, and after some time, by injecting warm water, and a little manipulation with sounds and catheters, succeeded in pushing back the fragment into the bladder, and the urine flowed freely; but even on this occasion, when more force was used than during the whole of the treatment, not a drop of blood was passed, although it might have been expected, from the urethra being scratched, or wounded, by the fragment. The following day (March 26th) a *second operation* was performed, and the Baron crushed two or three remaining fragments in a similar short space of time as in the first operation, and with as little pain to the child. For three or four days subsequently, sand and minute portions of the stone were voided; after which period his urine became quite clear, he ceased to wet his bed, and has continued to the present time quite well. Within the last two months a sound has been passed several times, but not a vestige of his former complaint apparently remains.

The only medical treatment employed was occasional enemas, with small doses of castor-oil, in order to keep the bowels free. He was allowed his ordinary diet, and played about with the other boys in the hospital.

The calculus appeared to be composed of the triple phosphate, and the amount of the *detritus*, or dry fragments, collected (exclusive of much sandy matter necessarily lost) weighed forty grains. Whether, in children, *lithotripsy* can generally be employed as successfully as *lithotomy*, future experience can alone determine, as no general deduction can be made from a few isolated cases; more especially as, I believe, hitherto lithotripsy has rarely been performed in children of so early an age as the case above related.

I cannot omit this opportunity of mentioning what I think a curious fact. Children are well known to be much more subject to stone than adults; yet, in nearly 7000 children of both sexes, between the ages of five and fourteen years, who have been admitted into this Institution during the last thirty years, the above has been the only case that has occurred.—I am, sir,

Your obedient servant,

S. G. Lawrance,
Surgeon.

Royal Military Asylum, Chelsea,
December 31, 1834.

OBSERVATIONS

ON THE

PATHOLOGY OF NERVES.

By Hugh Ley, M.D.

Physician-Accoucheur to the Middlesex and the General Lying-in Hospitals.

[Continued from page 513.]

Morbid Excitement of Nerves.

One other remote consequence of arterial excitement remains to be noticed. This is, a proneness to inflammation from slight causes, and a corresponding difficulty of cure. Two instructive examples of this have lately presented themselves to my notice.

Case.—A lady, the mother of several children, had, after one of her labours, severe suffering in her back, extending to the abdomen, which was exquisitely tender to the touch. Violent pain afterwards occurred along the course of the great sciatic nerve, so as in sitting to prevent her from resting upon that side of the nates. It was obvious that the very respectable practitioners under whose care she then was, and continued for a lengthened period, considered it as an affection of the origin of the sciatic in the lumbar and sacral nerves; for their principal treatment consisted in the application of leeches, and repeated blisters alternately to each side of the lower part of the vertebral column. In a subsequent pregnancy, for three months previously to her delivery, she was unable to leave her house, and scarcely even her chamber, on account of violent suffering a little to one side of the lower lumbar vertebræ and of the

sacrum, extending to the abdominal muscles of that side, to which it was so strictly limited that its extent was defined accurately by the linea alba. This greatly increased after her delivery, was of that hyperacute kind which denoted its neuralgic character, and was liable to fearful aggravation from the slightest movement or pressure. Upon the other side of the abdomen the deepest pressure produced no suffering; and it was evident that there was no tension in any one part of the abdominal cavity. As a matter of precaution, lest there might be any lurking subjacent inflammation, I suggested the application of leeches to the abdominal parietes, although my patient assured me that on the former occasion they had been tried without success. She yielded, however, to my recommendation, when they were followed by an aggravation, rather than any subsidence, of the symptoms. They produced erysipelatous inflammation, followed by little ulcerations around the orifices from the leech-bites, which were exquisitely sore and sensitive, and weeks elapsed before they assumed a healthy character, or showed any disposition to heal. The great sciatic nerve, which had not altogether escaped during pregnancy, now became more violently affected; pains shot in the direction of its more superficial sensitive branches in different parts of the limb; and one of her most prominent symptoms was a very severe pain, accompanied with throbbing, under the ankle. When I pressed upon the nerve as it here passes upon the side of the os calcis, she suddenly drew away her foot, on account of a lancinating pain which darted under the sole of the foot *.

Case.—Whilst in attendance upon this lady, I was consulted by a patient in Chelsea, who, being about five months advanced in gestation, had small oblong, hardish, and circumscribed tumors under the integuments of the leg, close to the inner edge of the tibia. These were exquisitely tender, and were allied to, if not identical with, the disease described by Mr. Wood * under the denomination of painful subcutaneous tubercle, as well as some very interesting cases detailed with great minuteness by the late Mr. John Pearson †.

All exertion, and the slightest pressure, as from a stocking or the bedclothes, produced intense suffering in the part, darting towards the foot. A very respectable practitioner had applied leeches to the part, but without the slightest relief. They produced surrounding inflammation, and the leech-bites festering, remained unhealed, ulcerated, and exquisitely sore, for many weeks. The symptoms at length yielded partially to confinement to the bed, the leg being protected by what was equivalent to a fracture-cradle, to the sedulous application of cold evaporating lotions, with opium, gentle aperients, and an abstemious regimen. She, however, continued for some time subject to a recurrence of her symptoms, and was obliged therefore to be very cautious as to exertion. A long walk, too long continuance in the erect posture, produced such uneasy feelings as powerfully to warn her of the necessity of recurring to the horizontal position.

If any excuse be requisite for the introduction of these cases, I can but plead their interesting nature, their connexion with the symptoms of morbid excitement of individual nerves, and the conclusion to which they lead. They seem to inculcate this practical precept—that where painful symptoms arise from some cause of irritation, as inflammation or tumor at the origin or in the course of a nerve, the symptoms, however, manifesting themselves at some distance from the seat of the disease, then, as in Sir Charles Bell's case, communicated to the public by Dr. Cooke, "by repeated leeches along the course of the nerve, together with some other remedies, the patient may be restored to health;" but leeches applied to the part in which the symptoms appear,

* This is the second instance which has fallen within my observation of neuralgic suffering referred to the heel from irritation, perhaps some accidental inflammation, about the roots of the sciatic nerve. In the other case, the lady was subject, at distant intervals, to attacks of such agonizing pain as to confine her to her chamber—often to her bed; and for some time afterwards she could do no more than hobble about her house on crutches. I have seen little of this lady for some years, but have reason to believe, that since two great causes of additional excitement have been removed by time—menstruation and child-bearing—she has been entirely free from her former attacks. She bore with stoic fortitude the sufferings, which she more than once described to me as like those which she supposed the violent driving of a large iron screw into the heel would produce.

* Edin. Med. and Phys. Journ. vol. viii.
† Med. Facts and Obs. vol. vi.

seem more frequently to add a new and painful disease, without corresponding relief to the original malady. They do more harm by the irritation they excite, than they do good by the abstraction of blood.

What is the precise condition of a nerve in a state of exeitement, characterised by pain or convulsive movement, or the combination of the two in the part which it supplies, is a question which, in the present state of our knowledge, or rather ignoranee, of the nature of nervous influenee, it is far from easy to determine. Until we have ascertained what is the natural state of a nerve in the exercise of its funetion, it is impossible to understand in what a morbid excess of that state consists, and of both we are profoundly ignorant. We recognise them only in their effeets.

It is seareely neeessary for me upon this point to advert to the different theories which have been advanced to explain the functions of nerves. The doctrines of the eireulation of a fluid in tubes, there being no sufficient proof of the existence either of a fluid or of tubes, as well as that which referred the phenomena of nervous influence to eertain vibrations, have had each its advoeates; but they have now given place to the more reeent dogma, that the exercise of nervous energy depends upon galvanic influence, and, indeed, that they are the same in essenee. The evidence, however, upon which it has been alleged that this important vital function is dependent merely upon galvanic ageney, is, in my estimation, far from eonelusive. Galvanism may indeed exeite the action of a nerve, and re-establish a eommunieation between the extremities of a divided nerve, and produce a renewal of its powers; but, with the utmost defereneе to the opinions of those who by their talent and exertions have won for themselves golden opinions, their experiments and observations appear to me to be totally insufficient to establish the identity in essence of nervous energy and galvanism. A metallic tube may be divided and re-united by a leathern hose; the offiee of the tube is restored, but the eommunieating medium is not a metallic tube: so, divided nerves are brought in eontaet or communication by a metallic body passing from one eut extremity to another, or from one nerve to another, and nervous influence is supposed to be generated—I should rather say excited or produced. But this is no suffieient proof that the metallic communication is equivalent to nerve in all its offiees and attributes, or that galvanism is nervous energy. I believe galvanism to be to the nerve in these eases what venous blood is to the right, and arterial to the left side, of the heart; or, to come nearer to our own subject, what arterial blood is to the brain.

Mr. Swan has, in his work upon the Diseases of Nerves, reproduced the doctrine of vibration, though somewhat modified. He does not, indeed, assert that in the production of the phenomena of nervous energy the nerves vibrate like a musical chord, but he inclines to the opinion that there is "action, so as to produce motion for the ordinary funetions of the nerves;" that "from the great retraction after their division, and the sometimes straight and sometimes waved or tortuous appearance of the fibrils, it is most probable that their state is not altogether passive*." The transition from this opinion, as to the ordinary function of nerves, supposing it to be established, to that which would refer an excited state of the nerve to an inordinate and anormal degree of this "movement," is natural, easy, and obvious, and accordingly Mr. Swan arrives at that conclusion, as appears from the following passages in his works:—"I eonceive," says this generally judieious and practical writer, "that in some eases there is a contraction of the nerve itself, which produces pain;" and again, "I conceive that eontractions of the nerves may take plaee and produce pain in the same manner as those of the muscles during their violent aetion in cramp or tetanus†." "When pain has been excited in any distinct and previously healthy part by a disordered organ, and has arisen in the first instance merely from a eontraction or *spasm of the nerve*, it may have been so often repeated as to have produeed suffieient action of the nerves and blood-vessels for making the surrounding parts irritable and liable to be affected with a variety of fresh causes, even when the organ that first produced the pain has resumed its healthy funetions ‡." Lastly, "Tie

* On Diseases of the Nerves, p. 4.
† Ibid. p. 4, 5.
‡ Ibid. p. 17.

douloureux in the nerves of the head and face may arise from *a spasm of the nerve*, through sympathy with a distinct part*."

I am fain to acknowledge that these statements produce no very definite impression upon my mind as to the exact pathological condition of an excited nerve; or if it is really meant that the state of the nerve under such circumstances is identical with that anormal condition of a muscular fibre in a state of convulsive contraction, there is at least a deficiency—perhaps I may venture to add a total absence—of proof. It is, indeed, within the bounds of possibility that such may be the case, but we are at least ignorant of the fact; and the statement, if it be intended to be taken literally, rather than as a figurative or illustrative expression, is at best but an incautious application of a term hitherto devoted exclusively to an anormal condition of muscular textures, and is calculated to lead to confusion and error, rather than to the elucidation of that obscurity in which this intricate subject is involved.

Defective Nervous Energy.

Having now considered the symptoms and consequences of morbid excitement of nerves which consist of violent paroxysmal pain, excess of vascularity, of heat, and of secretion in the parts supplied by those nerves, together with a proneness to inflammation, which is little disposed to yield to remedies, I am next to consider the evidences and consequences of defective nervous energy. The direct results of this "*effect defectice*" need not detain us long: they are the converse of those of excitement. If it exist in a nerve devoted to sensitive organs, the sensibility will be impaired; if in a motor nerve, paralysis of the muscles which it supplies will be the consequence; if in a compound or symmetrical nerve, which ministers both to motion and sensation, as in the extremities, local or partial paralysis will be the result; and this may exist in its various degrees, from mere imperfect motive power and impaired sensibility, up to complete paralysis of the muscles, and anasthesia of the surface.

To this general law, however, there is an exception in those cases where paralysis has been the result of the destruction of the continuity of a nerve by an inflammatory process. The inflammation in these cases rarely continues in the part below the injured part, or if it exist, the communication with the sensorium being cut off, mechanical violence done to it produces no sensation; but inflammation is apt to linger in the upper portion of the divided nerve, and this may occasion pain in parts upon which it should be distributed, although no nervous communication remains.

The other collateral effects of defective nervous energy will require at least a brief consideration. One of the most common of these is wasting of the muscles of the part affected. This can scarcely be from any increase of absorption; it is too gradual for the operation of such a cause, and there is no proof of such increase: on the contrary, the puffy ankle often observed in paralytic patients, would seem to indicate that the lymphatics are impaired in their action, as well as the nerves of the limb. It is much more probable that this withering of the muscles arises from defective supply by the nutrient vessels in the last process of assimilation. It has been already seen, that in an excited state of nerve the arterial circulation is increased; so in cases of defective nervous energy, all the actions which depend upon nervous influence are diminished. The vessels of the capillary circulation much under the influence of nerves, are enfeebled; the paralytic limb is consequently defectively nourished, and the general results are well, though briefly, enumerated, by Dr. Cooke, in his observation, that "paralytic limbs often become more soft and flaccid than natural; they waste and shrink, and sometimes appear œdematous."

Another necessary consequence of defective arterial action, is a diminution of temperature in the paralysed part. Upon this branch of the subject it has been already seen that Mr. Earle has entered much at large, and has deduced from the negative evidence which such cases afford, the general and positive principle, that "vital heat is the result of arterious action on the nerves," and this, "notwithstanding there is no apparent diminution in the circulation of the blood;"—a conclusion, however, with which the ingenious writer himself is

* On Diseases of Nerves, p. 39.

not altogether satisfied, as a consideration of the experiments of Dr. Davy obliges him also to "consider the circulation of the blood as *one* source of animal temperature." I have already stated the grounds upon which I am disposed to dissent from Mr. Earle's views upon this subject, in the case of an excited condition of nerves; and the same reasons, *mutatis mutandis*, will apply to his explanation of the diminished temperature in parts deprived of nervous influence. The evolution of animal heat takes place in the capillary vessels, and is commonly in proportion to their activity; in paralysis, the wasting of the limb shews that these vessels have their function impaired; it is "soft, flaccid, wasted, and shrunk;" the calorific function "is proportionately impaired, and, as a general result, the limb is colder than the other."

This conclusion derives material confirmation from one of the experiments of Mr. Earle. He applied to the back of a paralytic hand a blister, which he "was obliged to repeat several times before it would act; at last, however, a vesication was produced. During the time that the blister was acting, there was no alteration in the thermometer placed immediately contiguous to the edge of the plaister; but on removing the bladder, and applying the bulb to the denuded cutis, a rise of three degrees took place. The blistered surface was not in the least sensible to any injuries, and healed very readily." The explanation of this is obvious, but seems at variance with Mr. Earle's opinions. There is here no evidence of any direct impression upon the cutaneous nerves, so as to increase their energy; "*the blistered surface was not in the least sensible to any injuries;*" and yet there was an increase of temperature of three degrees. But the action of the capillaries was increased, the cuticle was separated by the effusion from inflammation of the subjacent texture; secretion, therefore, went on with energy. Those changes occurred, under the influence of the blister, which usually accompany the alteration of colour in the transition of arterial to venous blood. Amongst the most important of these is the diminished capacity for caloric, in consequence of which "vital heat" is evolved, and the thermometrical temperature consequently increased.

The amount of this change of capacity has been somewhat variously estimated by different chemical philosophers. The specific heat, according to Crawford, of arterial blood, is greater than that of venous, in the proportion of 114·5 to 100; and according to three experiments out of four by Dr. Davy, who placed more reliance upon the results of the three, which constitute the rule, than in the single exception, is in the relative proportion of 913 to 903. Since, then, in the experiment of Mr. Earle, there was no cognizable change in the state of the torpid nerves of the part, while the action of the capillaries was increased, it is natural to infer that the increase of temperature was owing to the augmented activity of the arterial circulation, of which there was ample evidence, and not of any increase of nervous influence; with respect to which, as there was no evidence, we may apply the logical axiom—"de non apparentibus et non existentibus eadem est ratio."

It appears to be a proof and consequence at once of the influence of the capillary arteries in regulating the temperature of the human body, a principle which has acquired almost universal belief, and of the extent also to which these vessels are subject to nervous influence, that if, in consequence of diminished energy of the nerves, the capillaries are weakened, the power of resisting sudden, though what to others, or to a sound limb in the same individual, would be inconsiderable alternations of temperature, should be lost. That this is in reality the case has been fully ascertained, and has been well illustrated, by Dr. Yelloly, whose patient, though insensible to the heat of boiling water, or the vesication which succeeded the inadvertent exposure of the limb to it, yet "on putting his hand, at the desire of a friend, into a pail of hot grains, into which his friend, to convince him that it was not too hot, had thrust his own hand, there was an extensive vesication produced." "His hands were never free from blisters, which he got by inadvertently putting them too near the fire; and he had met with several severe burns without being aware of it*." This remark has been also amply verified by Mr. Earle, in the interesting

* Med.-Chir. Trans. vol. iii.

case of Thomas Anderson, who was "advised to place his hand in a tub of warm grains, having previously ascertained with his other arm that they were not too hot." He retained the arm in the pail for nearly half an hour, and, on withdrawing it, found the whole hand blistered in a most alarming manner; and at the extremities of his fingers, and underneath the nails, sloughs had formed. It would be unnecessary, even if it were within the compass of my intention in this sketch of the principles of the pathology of nerves, to dwell upon the most important practical precept which these facts inculcate, of putting a patient upon his guard with respect to his paralytic extremities, which are so liable to serious consequences from such slight causes: the knee near to a fire may be vesicated, or even sphacelated, when the clothes which cover it have suffered nothing.

It has been shewn that the results of defective nervous energy, when it amounts to a paralytic affection, are, in addition to the immediate effects, want of nervous power and of sensibility, a wasting of the limb, a proof of enfeebled action of the capillaries, diminished temperature of the limb from the same cause, and a want of power to resist sudden changes of heat. It now remains that I mention another consequence of long-continued paralysis—namely, the withering of the nerves themselves. Upon this point, Dr. Cooke has the following observation, part of which has been already quoted, for another purpose:—"Paralytic limbs often become more soft and flaccid than natural; they waste and shrink, and sometimes appear œdematous. Mr. C. Bell has observed, that in these cases the nerves themselves lose much of their substance *." This is the "atrophie" of modern continental writers; a subject which has been somewhat elaborately considered by one of the greatest ornaments of the French pathological school—M. Andral. He describes it as a state "which we have rarely an opportunity of seeing, unless the parts upon which the nerve is distributed has its nutritive powers, or other functions, impaired;" and he illustrates this more especially by reference to the optic nerve, which he considers as the type of "atrophie" of all other nerves, quoting (with complete and deserved confidence in their accuracy) the observations and experiments of Soemmering and Magendie, to prove that atrophy of the optic nerve is the general result of the destruction of the eye; that it occurs more slowly in man than in other mammiferous animals, and more quickly in birds than in either; and he concludes with the expression of his belief that the rapidity with which atrophy of the optic nerve is produced, depends upon the greater energy of vision in the being deprived of it. He further remarks, that the compression by tumors in their vicinity, will also occasion atrophy of those nerves, and mentions, in illustration of this, an instance in which the pneumogastric and phrenic nerves were subjected to compression, and consequent atrophy, from a schirrhous tumor, situated near or about them, and producing such *distress in breathing* as to have led to the suspicion of the existence of heart-disease *. Other instances are recorded, and amongst them, one of atrophy to the extent at last of the total disappearance of the optic nerve, from an osseous tumor seated in the situation of their decussation, which had entirely disappeared †. The olfactory nerves have disappeared in consequence of compression by a tubercular disease at the base of the cranium ‡; the trunk, and most of the branches of the portio dura of the seventh pair, have disappeared under the pressure of a fatty tumor, occupying the region of the carotid §

It thus appears that, in cases of paralysis, the nerve generally withers, and this may arise from the pressure upon the part of the nerve by a foreign body, as in the case recorded by M. Sanson, in which the decussation of the optic nerve was completely destroyed, or from the removal by interstitial absorption, the subsequent supply of the nutritive vessels being imperfect, in conformity with a general law of the animal economy in parts which have been little used, or from accidental cause have become useless. For years I was subject to a painful affection of the soles of my feet, which prevented my walk-

* Cooke on Palsy, p. 8.

* Precis, &c. vol. ii. p. 876.

† M. Sanson, Journ. Clinique des Hôpitaux, tom. i. No. 17.

‡ M. Berard, Journ. de Phys. de Magendie, tom. v. p. 17.

§ M. Billard, Archives de Médecine, tom. vi. p. 347.

ing without intense suffering. In consequence of the inactivity of the muscles of the legs, these withered and lost their firmness; the right foot recovering more speedily and completely than the left, the muscles of the latter remained smaller than those of the former. A lady, walking in the street, had her foot violently bruised by a piece of coal falling upon it from a height. She was unable to use her foot for some time, on account of the pain from inflammation, and at the end of a fortnight, to use her own expression, "her leg had gone away to nothing." It is the same with a nerve which has been rendered useless. Nature, conscious apparently of its inutility, removes it either by some increase in the activity of the absorbents, approaching in its character to ulcerative absorption, as in cases in which the nerve is destroyed at the point where the pressure is employed, or, as more frequently occurs, by diminishing gradually the action of the nutrient vessels, so as to withhold from the nerve the usual supply of blood for its growth and nourishment; as in those instances where the nerve withers beyond the seat of injury, or between an organ whose structure or office has been destroyed, and the sensorium commune.

[To be continued.]

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

The Dublin University Calendar. M.DCCC.XXXV.

We notice this work chiefly with reference to the new arrangement respecting medical degrees. In the University of Dublin it was, and is, the practice to take the Bachelor of Medicine degree in three years after graduating A.B. The period was lessened when the student, immediately after his matriculation in arts, entered on his attendance of the medical classes: he could then become M.B. in six years, instead of waiting for seven and a half. But the regulation adopted in March, last year (1834), facilitates still further the attainment of the same object, under certain conditions. The resolution of the Provost and Senior Fellows runs thus:—"That in addition to the usual modes (just described) of obtaining medical degrees, a Bachelor of Arts shall be entitled to a *liceat ad examinandum* for the degree of M.B. on his producing certificates of having attended the eight following courses; provided the certificates shew that, during each of the four medical sessions, he has attended at least one, and not more than three, of the courses which begin in November. The degree may be conferred at the July commencement of the middle Bachelor year. The courses to be attended are, 1. The six courses of lectures delivered in their respective departments by the professors of the school of physic. 2. One year's attendance on the practice of Sir P. Dun's Hospital, including six months' clinical lectures in that hospital. 3. A course of lectures on midwifery, by the professor of midwifery of the Royal College of Physicians."

No alteration has been made in the time appointed for the attainment of the Doctor's degree; though we think that, in that respect, some change suited to the present state of things might be very fairly ventured on. The M.D. of the Dublin University must be an M.B. of five years' standing; his exercises are one opponency and a printed thesis in Latin.

One attractive feature in the volume before us is its giving the questions proposed to the candidates for fellowships, mathematical and divinity premiums, medals for science and classics, and even the prize questions at the quarterly examinations. We are thus presented with a fair criterion for estimating the average attainments of the better order of students in Dublin College. Might not a selection from the questions for *medical* honours be added with advantage—especially as the chief part of the examination is now conducted in English? Such an arrangement, we think, would be acceptable to a large class of readers.

We are much pleased with the "getting-up" of this Calendar; those of last year and the year before (for this is the third of the series, and we hope they will have an uninterrupted run) were favourably mentioned in this journal, and the present one is not less valuable than its predecessors, though it comes

out, we believe, in a less expensive form. The editor has evidently profited by his experience.

Traité complet de l'Art des Accouchemens, ou Tocologie théorique et pratique, avec un Abrégé des maladies qui compliquent les Enfans nouveaunés. Par A. Velpeau, Professeur à la Faculté de Paris, &c. Deux tomes. 1835. Baillière.

The first edition of this work was comparatively meagre, and only intended for students: in its present form it embraces fully all that it announces in the title-page, and is adapted not merely for pupils, but for practitioners, teachers, and professors. M. Velpeau defines midwifery, or, as he chooses rather to call it, tocology, as the *ensemble*, or combination of human knowledge relating to the reproduction of the species; and from an examination of his work, we must say that we do not know where a larger or better arranged assemblage of facts connected with midwifery can be found, than in the present two volumes.

Among the more novel and interesting chapters which attracted our attention, were those on obstetric auscultation, extra-uterine pregnancy, and superfœtation. On this latter subject we shall extract the recapitulatory passage. "I am surprised," says the author, "that modern physiologists, and even certain medical jurists, should assert that superfœtation is possible up to the moment when the ovulum reaches the uterine cavity, while they dispute its possibility subsequent to that epoch. It ought to be rejected equally in both cases. The effused lymph, or the decidua, is just as capable of preventing its occurrence in ordinary circumstances, as the ovulum itself. The four cases quoted by Millot are otherwise explicable; so are the two instances reported by Dewees: the example, indeed, given by Dr. Maton might be difficultly explainable, were it not that there is a defect in the details. Perhaps, on the whole, we should conclude that superfœtation is not possible, except — 1, In case the pregnancy is extra-uterine; 2, when the uterus is double; and 3, where the female has had intercourse on one and the same day with two different men, or, after a short interval, with the same man. There is, however, nothing repugnant to reason in admitting the possibility of superfœtation, as long as the uterine cavity is not occupied with any substance, nor the orifice of the tubes closed; and all the cases that have been hitherto reported on the subject are perhaps admissible, on the ground of their forming only certain varieties of multiple births."

The arrangement of M. Velpeau is natural and easy. After an historical and statistical introduction, drawn up with much ability, he enters on the main business of his treatise, by the anatomy and physiology connected with obstetrical science. In the third book he treats of gestation and its varieties, true and false; in the fourth, of the embryo and the fœtus; the fifth book is devoted to the practical subject of labour; and the sixth and last contains the author's views of the diseases connected with the puerperal state. There are sixteen useful plates annexed.

But the reader who is interested in midwifery practice, or teaching, will do well to examine the work for himself: he will not meet with a chapter in it which is not touched with the hand of a master; and, perhaps, if we except some little redundancy of style, and certain passages which might no doubt be more condensed, it will be agreed that no production hitherto issued from the press merits more praise, as affording an ample fund of obstetrical knowledge combined throughout with so much variety of learned illustration.

MEDICAL GAZETTE.

Saturday, January 17, 1835.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

Cicero.

COLLEGE OF PHYSICIANS.

The government does not seem disposed to wait for Mr. Warburton's scheme of reform—at least as regards the College of Physicians—but has already had communication with the magnates of Pall-Mall East, in reference to some plan of their own. There are, we suspect, two reasons for this—first, a desire to do *something* as speedily as possible,

and secondly, an impression that the honourable chairman of the medical committee has shewn himself to be rather too much of a partizan against the College. The present prime minister was nominally a member of the committee, but being dissatisfied with the spirit in which the investigation was carried on, he proposed some changes, which being rejected, he declined to attend—"he left the room, and never entered it again." We stated this circumstance before, and now repeat it, because the *honourable* (!) member who represents the Jew clothes-venders of Finsbury, and *mis*-represents the medical profession, had the impudence to state that Sir Robert Peel concurred in the proceedings alluded to, before he was in power, and was therefore likely to do so now that he is in office.

However, our present object is this: having ascertained that a Committee is now sitting, to consider the expediency of certain changes in the College, we are naturally led to inquire what changes ought to be made?

The first and greatest grievance is the separation of Physicians into two sets, or orders—viz. Fellows and Licentiates; and the first and most popular change would be its abolition. The license ought not to be granted to any one who cannot shew that he has had the highest medical education, and attained the highest standard of professional acquirement; and if he does, no one has a right, as a physician, to rank above him. In the College of Surgeons all belong to the same order; there is not first a list of those who have been educated in London, and next of those who have been educated elsewhere, but there is one common list, in which the only distinction is seniority. So we think that the heartburnings and dissensions among physicians will never cease till the distinction between Fellows and Licentiates be done away, and some common designation (such as that of *Members*) substituted—the present lists being blended into one, in which the order of the names shall indicate merely the date of the licenses. The Fellow of the College, be it remembered, is a Licentiate, and it is only as such that he is entitled to practise; while it is in right of the Fellowship that he belongs to the governing body. Now, for ourselves, we think the Licentiates might well compound for the present Fellows continuing their privileges in this last respect, provided the obnoxious distinction as to the name were laid aside, and provided also they had yielded to them the *right* of being present at all lectures and orations, as well as of admission to the library and museum. So long as the Licentiates are excluded from these last, so long have their complaints a plausibility which we feel satisfied will obtain for them a favourable hearing in parliament, and which will prevent the permanancy of any arrangement which falls short of the one we have suggested.

Another very important change, too, and one on which we have on former occasions insisted, is the establishment of a course of study for physicians, which curriculum, and not the possession of a degree, ought to be the passport to examination for a license to practise, and for admission into the College.

Formerly a degree was required, because, when the present regulation was made, Universities were the only places at which the necessary education could be acquired, while the diploma was the test of such opportunities having been turned to due account. But now it is otherwise, and more especially with regard to medical science; for whereas formerly the education of the physician consisted exclusively in reading books, it now consists in reading nature also. But this last not only cannot be done best at the Universities, but can scarcely be done at all, owing to the limited field of observation which

is afforded. It is high time, therefore, that the possession of the degree should cease to be looked upon as a necessary preliminary to entering the College of Physicians; and the College ought, in its place, to require proofs—1st, of a sufficient time having been devoted to literary and scientific pursuits; 2d, of sufficient means of studying medicine having been possessed (for anatomy, chemistry, and an acquaintance with disease, can no more be acquired without bodies, apparatus, and patients, than can literature without books); 3d, the use made of the "time" and "means" referred to, ought to be tested by an adequate examination.

If these preliminaries have been established, the admission into the College ought to constitute the individual a physician, and to carry the doctorate with it. We are aware that at present the College has the power of licensing persons who have no degree; but the privilege has fallen into abeyance, and never can become available, unless it be extended to the conferring of a degree in physic.

There is, we believe, even now some project in agitation for admitting persons without degrees, with a view chiefly of relieving the dissenters: but we do not like the principle in which it seems to have originated, nor which seems likely to guide its adoption. It appears too like a temporizing piece of expediency on the part of the minister, to quiet certain political opponents, rather than a liberal and well-digested plan to improve the profession. Dissenters are not admitted to degrees at the Universities; but it is thought, as regards medicine, this might be remedied by inducing the College of Physicians to take them without degrees. Now either such admission will or will not carry with it the doctorate: if it does, the College, we presume, will either make the new doctors Fellows or Licentiates (for we have not heard that the abolition of the distinction which we recommend is contemplated); if Fellows, then all the present Licentiates would, of course, at once claim admission on the same terms; nor could they with any shew of justice be denied. If, on the other hand, they make the new Pall-Mall doctors, Licentiates, then do the London College of Physicians acknowledge that *their* degree in medicine is inferior to that of Oxford, Cambridge, and Dublin. Again: if the admission does not carry with it the doctorate, but merely a license to practise, then are the Dissenters not relieved, as they will not be regarded as physicians;—while the present Licentiates would have to complain, that though the College had compelled *them* to procure degrees, yet did they hold that distinction in such light estimation, that, in an English dissenter, it was regarded as quite indifferent whether he had obtained it or not.

No change short of abolishing all distinctions of grade among physicians, as practitioners, will now avail; one common list must contain all, under one common designation, and ranged according to the dates of their admission. Any distinction among the members ought to be merely an additional and separate list of office-bearers; and it would be no more than reasonable to let those now in possession—viz. the present Fellows—continue to be the governing body. But we are quite satisfied that if any patching-up be attempted—any sacrifice of principle to expediency—any thing less broad and liberal than we have suggested—then will the object in view not be accomplished, and therefore it were better to do nothing. We assume that the object of any change originating in the College is either to gain a direct advantage, such as the power of conferring medical degrees, or to get rid of the irritation which the constant "pressure from without" at present produces. But we do not believe that the new government (and certainly none such

as would be likely to succeed to it), would confer on them the power in question, unless accompanied by such modification of their regulations as should open a direct road for the dissenters—and if for them of course for others—to the highest honours in medicine, without passing through Oxford or Cambridge. Neither, we are convinced, would any more restricted measures free the College from the hostility of the Licentiates, or from their persevering efforts to force the gates of the sanctuary—efforts which, though hitherto unavailing, the most sanguine of the Fellows must feel will probably be successful at no distant period, changed as the whole aspect of public affairs has within a few years become. We repeat, then, what we said before, either "do nothing, or leave nothing for others to do." Half-measures will but entail the mortification of having yielded, without securing the repose of pacification.

Now we know very well that most of the Fellows who read this will say "the Gazette is becoming radical;" but we say nay—we do but argue for the adoption of measures which, or something analogous to which, must be adopted, or else, in our humble judgment, will there be soon no College of Physicians in existence, and its only remnant be seen in a highly-educated and exclusive, but yearly dwindling, club of English graduates.

ADVERTISEMENT EXTRAORDINARY.

Wanted, at the Valetudinarium, a few cases fit for the knife. Rare and striking diseases would be preferred, but the most trifling contributions will be thankfully received, and all the minor operations will be admitted as *capital*, and published in the weekly journal of the University.

As it has been ascertained, on the most competent and disinterested authority, that the London surgeons are lamentably deficient in "the science of operating," it is expected that they will avail themselves of the opportunity now afforded them of improving their manual dexterity, particularly Messrs. Astley Cooper, Keate, Bell, Brodie, Key, Green, Scott, and Stanley (vulgarly reputed to be our best operators), the whole of whom, we understand, have agreed to send those cases to Gower-street — which they cannot operate upon themselves. Hitherto, the only displays of the "science" have consisted in the successful extirpation of a large tumor from a plaster-of-Paris bust; but real operations will be *done*, and the casts laid aside, as soon as living subjects can be found.

N.B. A liberal commission given for damaged noses; and any gentleman consenting to be trepanned, will receive a London University share *gratis*, —being 25 per cent. under the market price.

[We have been not a little amused with the following specimens of clinical instruction just now tendered to the surgical pupils in Gower-Street. We are sorry our space is so limited, or we should certainly cull more of those flowers of delicacy and good feeling:—]

DESCRIPTION OF A "SCIENTIFIC SURGEON."

"I know the animal calling itself a 'scientific man' in our profession full well, and never wish to see one of the species again. It does not exist, I presume, on this side of the Tweed. It looks wise and dignified, and pretends to see further into the heart of a millstone than its neighbours. He (shall we give it a sex) is naturally deficient in dexterity; 'all his fingers are thumbs,' to use a common expression in the north. He has never been at the trouble to acquire any use of his hands; he has thought it beneath his notice. He has, moreover, such a plentiful lack of judgment, that he is totally incapable of devising or executing any operation of consequence, without committing a gross outrage on the feelings and sympathies of the spectators. He pretends to great sanctity, is an adept in cabal and intrigue, and is prompt in depreciating the talents of those in his own line who may be 'struggling for life against the waters.'"—*Mr. Liston's Clinical Lecture.*

CONTRAST PRESENTED BY THE "KNIVESMAN."

"It is only those who are themselves lame and impotent in such works as can be judged of by ordinary observers, that declare operations to be beneath the notice of scientific men, and they, forsooth, these bunglers in their trade, would wish to be

thought the *only pure scientifics.* * * * Was it ever alleged that an accomplished leader of an instrumental band, because by intense study he had acquired a fine touch, great dexterity in fingering his instrument, and by his style of bowing could give grace and expression to his performance, was ignorant of music. * * The advantage of having an operation well planned, was, I believe, never better exemplified than in the removal of the tumor which this painting and wax cast represent."—*Ibid.*

[*Here the lecturer proceeded to operate* UPON THE CAST.]

CLINICAL LECTURES,

Delivered at the Middlesex Hospital, 13th and 20th December, 1834,

By Sir Charles Bell.

DYSPHAGIA.

[The case was read from the hospital-book.]

"Robert Linan, 43 years of age, came here on Tuesday the 9th of December. He had not been able to swallow even a drop of liquid since the preceding Friday; he is a little, spare, sallow man; he speaks in a whisper, that conveys the idea of disease in the larynx. In May last he was admitted into the Physicians' ward; he had difficulty of breathing, cough, and some hoarseness; he got considerably better at the end of three months; he had never spit blood. In the beginning of October he first felt difficulty of swallowing, and came here for relief. Two blisters were applied to the throat, and these almost immediately relieved the dysphagia.

"He has returned again. He lost the power of swallowing on Monday; the difficulty continued with little abatement till Thursday. He appears to have taken almond emulsion, and vinum ipecacuanhæ, with some relief; but he always found it necessary to take a little fluid after every solid mouthful, to get it to pass an obstruction just below the cricoid cartilage. On Friday he had eaten his dinner as well as usual, but at supper he found that he could not swallow even a cup of chocolate. Suffering no pain further than that of thirst, he allowed it to go on till Monday night, in the hope of its getting well of itself, and followed his usual avocations. At eight o'clock that night he came to the hospital, and had half a dozen leeches put on his neck. On Tuesday the œsophagus was examined with the soft wax bougie, but the instrument did not pass; and it was observed on withdrawal to be flattened on one side. He now attempted to swallow a little milk and water: it seemed for a little to be swallowed, but it brought on a fit of coughing; and after a little, a sort of eructation brought it all up again. He was sent into the ward. On inquiry, it was found to have been the belief that his disease was ulceration of the larynx, and spasm of the lower part of the pharynx. A solution of nitrate of silver, eight grains to the ounce, was applied with the sponge of the probang. After this he attempted to swallow some warm milk and water; it remained for a minute in the œsophagus, but soon brought on a fit of coughing, and then it was brought up by eructations as before. The pulse was getting weak for want of sustenance, and an injection of a pint of strong beef-tea was administered, after which he felt greatly refreshed. He had a liniment of camphorated oil and tinct. opii rubbed on the sides of his throat. He was furnished with some beef-tea, and Reid's injecting apparatus, to use in the night, as he was obliged to go home to attend on a helpless wife, who could not undress herself without his assistance. He returned in the morning very faint. He was now seen by the surgeon, who attempted to introduce an elastic catheter, No. 4 or 5, and after a little hesitation at the termination of the pharynx, it passed freely down its whole length. The precaution of passing the instrument through paper, and holding a lighted candle to it, was taken, lest by any chance it should have passed into the larynx. A mouthful of milk was now squirted through the tube. It went down, but there was evidently resistance; and on removing the lips the milk returned spouting from the catheter: this was again repeated with the same results. The catheter was withdrawn, and he attempted to swallow, but in a minute or two the coughing and eructation came on as before, and what he had seemed to swallow returned. He was so weak that the fatigue of the operation made him faint. He was now put into the warm bath to relieve the thirst, which he said was such as almost to madden him at the sight of liquid. After the bath he was more comfortable than he had been since the attack began, and fell asleep. The linimentum hydrargyri was rubbed into his neck; and he had some mucilage and tinct. opii, of which he was occasionally to sip a little, and to let it lie in the pharynx as long as possible. During the day he was nourished with frequent injections of beef-tea and mutton-broth. In the afternoon the bath was repeated, and attempts made with a small catheter similar to those described in the morning. The catheter was again passed by the house surgeon, but with no advantage; it did not pass the stricture, which appeared to be in the commencement of the œsophagus. As he sat at the fire he

brought up what appeared to be a piece of meat.

"11th.—This is the sixth day since a drop of liquid has been swallowed; he does not complain of hunger, but of intolerable thirst. He says he has experienced great comfort from the mucilage and opium, which was the only thing that did not immediately bring on a fit of coughing and eructation. He has brought several little pieces of meat, which look like shreds of boiled beef, which he spat up in the night. At half-past twelve he met the surgeon at the door of the ward in great joy, having at length succeeded in swallowing some milk. Beef tea was now given him, which he swallowed with considerable ease.

"*Vespere.*—The nurse has been too kind to him, giving him more than his allowance of broth, which was ample; the pulse is a little excited; his thirst is still great, but he was ordered to take nothing more than a little nutriment, and to have a spoonful of castor-oil in warm milk."

COMMENTARY.

I am sure this is a case that must go to your hearts. There can be nothing more touching than to see a man actually starving, and suffering from excessive thirst; exhausted, misery in his looks, and absolutely fainting from inanition; and the conviction at once arises in your minds that something must be done immediately. Now I do assure you that I came to the hospital that morning very uncomfortable in my feelings, expecting to find him worse, and that an operation of great danger and difficulty must be done for his life; for I saw no alternative, although the circumstances were altogether new.

You will have reflected on the appetites which nature has implanted in us for important purposes, silent monitors which urge us to the necessary supplies. You think not of thirst but as a source of enjoyment, and so it is; but you see here with what an urgent and painful demand it gives token of the wants of the system: "He was maddened by the sight of liquid."

Next I beg you to notice, as connected with your general studies, the extraordinary fact of the violence of the symptoms of muscular parts, produced by apparently slight causes; and on the other hand, as contrasted with it, the almost entire absence of symptoms, when, on dissection, you find there has been great disorder. For example, your practice will furnish you with instances of affection of the stomach, and violent action consequent upon it, while in the dead body there is no morbid appearance whatever; on the other hand, you will find great ulceration of the stomach, extending through one-half of the organ, with comparatively no symptoms. You will find, again, a man breathing with excessive difficulty, with the circulation exceedingly disturbed; and on dissection there is nothing to be found amiss in the heart; and, contrasted with this, I have found a tumor surrounding the whole heart, or ossification of the actual substance of the heart, without any train of symptoms corresponding with this obvious defect. The same circumstance occurs in every part which has a muscular action, as the bladder and the rectum, and the duodenum and gall-bladder, &c.; and therefore you might be led to expect something similar in the pharynx and larynx, irritable muscular parts. There is on the table a preparation sent down by Dr. Wilson*, which I understand has already been the subject matter of three lectures by three different professors. My whole object is that you should exercise your own good sense, and that nothing important should escape you. I have no desire to employ the hour with a subject which, so far from being overlooked, has seriously occupied the attention of our physicians; but still, is it not remarkable that such a thing should come from the interior surface of the œsophagus, and that the physicians can hardly say whether it is part of the original and proper structure of the tube, or a secretion excited by inflammation? It signifies not to my argument which it is; there is the proof of extraordinary destruction, and the woman not suffering half so much as we find in many hysterical girls who are incapable of swallowing at all. I have examined the œsophagus of such a patient, after an inability of swallowing of eight months' continuance, and found the only circumstance at all remarkable to be the paleness of the fibre of the tube, and which is consequent, as you know, on inaction in any muscle of the body.

The impression left upon us with regard to the case under review is, that it is an instance of the effect of remote disease on the muscular tube, probably of phthisis laryngea. I will relate an odd circumstance. Some time ago I went into a private family, and they were very full of admiration, and warm in their applause, of a practitioner who had just come to town, and who had found some new disease to be very common, and very much mistaken by the profession; and had also discovered the means of curing it. It was disease of the larynx, and the remedy was the application of lunar caustic in solution. I have the happy faculty—and to me it is a very happy one—of forgetting what I have

* It was a case of poisoning with sulphuric acid, an account of which is contained in our 14th volume, page 489.—Rep.

written; but just at the moment I had a sort of recollection that I knew something of this practice before, and, after a time, I remembered that, in the hospital reports, I had described the disease, had given many dissections of it, and had recommended and practised this very remedy. I mean you to understand by this, that I have seen a great deal of disease of the larynx; and, as anatomists, you cannot be surprised that when the larynx is diseased, the muscular coat of the pharynx should be spasmodically affected. You find my colleague, Mr. Mayo, saying that, in a case which occurred the other day, where there was an incapacity of swallowing, and the patient died, there was nothing the matter with the pharynx, but only with the larynx. Have we, then, a key to the explanation of this man's condition? The notion of disease in the larynx corresponds with his whole aspect; he is a phthisical looking patient; his voice corresponds with the idea of ulceration in the larynx; and then you find that he is seized with spasms and difficulty of swallowing, and symptoms usually attendant upon this disorder of the larynx.

But there is another view of the case, another circumstance of interest—the rejection of a piece of meat like boiled and macerated beef or mutton. When this was rejected he had immediate relief, and expressed his thanks energetically, as if I had been the means of saving him. It seems somewhat strange that he should not have known of this sticking of the food in the throat until it is brought up; and it is no less remarkable, that the rejection of these portions permitted him to swallow, by relieving the spasm in the pharynx.

The case, then, being represented to me, and having all the appearance of stricture, I said to the man, "Now answer me distinctly this question, when did this extraordinary difficulty come on?" and he replied, "On a certain day I swallowed perfectly well, and the next day I could not." That does not look like stricture of the œsophagus; for when there is real stricture, the person begins his narrative by saying, "O! I had always a very narrow swallow." They invariably tell you that they have had a difficulty in swallowing large pieces, and a facility in swallowing liquids. When there is a spasmodic difficulty, it is the very reverse of this: a person can swallow a smooth morsel more easily than a few drops of liquid.

[The house-surgeon here intimated that the patient had been subject to difficulty of swallowing for six months, and had been obliged to wash down his food.]

That still (continued Sir Charles)—that corresponds sufficiently with what I presume to be the condition of the neighbouring parts—a spasmodic difficulty, and a necessity of washing down his food: there is in this fact nothing contrary to the hypothesis I have proposed. However that may be, it is distinctly stated that he swallowed one day, and the next there was a total obstruction. The truth is, we cannot trust to the narrative of a patient; we are poor creatures ourselves when we are patients; and a man seeing, as it were, the approach of death, cannot be conceived to be very good evidence in his own case. Hence it is that we take all possible precaution; and before any thing else was to be attempted, I conceive I was right in passing a small catheter through the stricture at the bottom of the pharynx, and squirting in some warm milk: and I think that the repetition had the happy effect of getting a little fluid down; and when vomiting came on, and the action of the throat was restored, a little portion of meat was brought up, and after that another portion, which relieved him completely, he being now left in the hands of the physician, who, I hope, will be successful in relieving the original disease, to which all you have heard is merely accessory and symptomatic.

The subject continued:—

ANEURISM.

Delivered on the 20th December.

If we possessed eloquence, we should have no occasion for it in the present instance, because the legitimate object and use of eloquence is to prepare the heart for a certain impression; to remove the prejudices which prevent us seeing clearly or reasoning justly; and to fit us to understand and fully to appreciate a plain story told by a plain man. But I am quite sure that what you have lately seen in this hospital has opened your understanding, in the first place, to the importance of your profession; and, more than that, to the severe and anxious duties that you have to perform. It is said that a General arranges his troops, and infuses into them a spirit of conquest; but deep in his own breast rests the possibility of defeat, and for which he prepares secretly. So ought a surgeon to go forward to his operation with the confidence which knowledge produces; but in all capital operations he should also revolve, in his own mind, every possible disaster. Now you have seen an operation of great difficulty performed, and you have seen the most disastrous accident taking place during the operation, and you have witnessed, and must, I am sure, fully appreciate, that manly decision and vigour of mind which give calmness and promptness in these circumstances.

Our subject is aneurism; and there cannot be two more interesting cases than those I have to place before you.

You remember certain points connected with aneurism, and I am sure you recollect its definition; for this is especially necessary to a comprehension of the subject. It is an abrupt tumor of the artery,—not an enlargement of the vessel in its proper coats; and the consequence of such abruptness is the formation of a coagulum, the presence of which coagulum comes to be the essential character of aneurism. I doubt not but that you remember the reason of this coagulum forming—that the interior surface of the artery is burst up or destroyed. Now there is a relation established in nature between the blood that is flowing in the tube and the interior of that tube. This relation, like many of the influences of the life of the body, we want words to define and describe; but of the effect we cannot be ignorant—viz. that the blood is kept fluid in that *living* vessel: instantly, however, and most happily, when the interior surface of the vessel is chopped or broken up, that moment a coagulum is formed. Here, then, is the combination of circumstances—the abrupt tumor is attended, or rather preceded, by a rupture of the inner coat of the vessel; and this disruption is attended with the formation of a clot.

With regard to the cause of aneurism, it becomes a most important matter for you to consider it; for unless you understand it, you will not comprehend fully the merit of Mr. Hunter, nor how the rule of practice is laid down by that gentleman who is supposed to be his most successful commentator—Sir Everard Home. There is, as we advance in life,—and I am speaking to dissecting-room pupils, who cannot be ignorant of the fact,—a general change taking place in the arteries of the body; and during that change, before the period of old age arrives, and whilst yet there is vigour and strength both in body and mind, aneurism is apt to take place. The condition is this: the arterial coats lose their pliancy—that elasticity which is necessary to resist without obstructing the heart's action—and they become thick and firm, and acquire an inert resistance. Sometimes there is a deposition of fluid in the interstices of the coats, the fluid becomes concrete, and what is called *ossification* takes place; but it is not ossification, it is merely a deposit of earthy matter. The earthy matter thus deposited takes the shape of the artery; and if any sudden change by exertion, or twisting, or violent action of the heart, stretches the artery where it has been curved, or bends it where it has been straight, breaking the coats of the vessel where the deposit has taken place, rupture ensues. This is generally the commencement of aneurism, and therefore of course you see at once the importance of the fact; for it is continually taking place under your eye. In this last operation, the coats of the artery burst upon the edge of the portion that was ossified.

Aneurism of the Arch of the Aorta.—Ulceration into the Œsophagus.

The first case I have to mention is one with which you are as familiar as myself; and I know not what this gentleman, whose pen runs so fast, may tell of us, for we have misunderstood the case sadly. The dissection is now before us, and we must acknowledge that we were wrong. "Il n'est rien de tel que d'être honnête homme," say the gentlemen on the other side of the channel; or, according to our homely expression, "Honesty is the best policy." I allude to the case which we conceived to be an obstruction of the œsophagus by a piece of meat; and I really think the explanation given by the house-surgeon is better than any thing I have offered—viz. that it was not a piece of meat, but a portion of compressed coagulum from an aneurism, which came up. You will no doubt examine the morbid parts carefully: they are before you. The poor man suddenly died; some blood passed out of his mouth; and upon dissection, his stomach was found full of blood. On further investigation, it was seen that there had been an aneurism of the arch of the aorta; that the aneurism had come in contact with the œsophagus, adhered to, and ulcerated into it; and there is every probability that what was brought up by the act of vomiting was a portion of the white firm coagulum that always forms in aneurism, and prevents the blood for a time from bursting out of the sac.

This being the case, we have some difficulty—and yet not much—in reconciling the symptoms with what you now see before you. For example, you remember I stated that I passed a tube through the part where I conceived the obstruction to be; that I was much surprised, on injecting tepid milk into the tube, to find that it did not pass freely into the stomach; and that when the lips were withdrawn from the tube, the milk came spouting out of the tube again. Now on the dissection, it was found that there was a stricture, but of a spasmodic nature, just behind the larynx—such a stricture, that the point of the finger could not pass; but upon being pressed, the fibres dilated completely: implying that it was not a permanent, but a spasmodic stricture. The tube, it appears, had been passed through this spasmodic stricture opposite the cricoid cartilage;

but when the fluid was injected, the aneurism mechanically pressed on the lower part of the œsophagus, and so the fluid distended the space between the mechanical compression below, and the spasmodic stricture above. This explains the filling of the throat, and why, as soon as the lips were withdrawn, the milk returned by the tube.

You may infer, then, that the observations were not applicable to the circumstances of the case; yet, allow me to say, not altogether remote or foreign. I argued that the piece of meat sticking in the œsophagus had increased the spasm, the spasm occurring where there was no actual disease; and now we find that the aneurismal tumor, pressing on the œsophagus in the posterior mediastinum, was the formidable cause of obstruction, and of the spasmodic difficulty higher in the tube.

You are aware that this patient came from under the care of the physician; and I suppose you know that he was examined by percussion and the stethoscope; respecting both of which I am accused of being very sceptical. Here we have the fact before us, that the aneurism was not discovered. Now there is something in the mass of aneurismal clot occupying the chest,—something also in the manner of the circulation of the blood through an aneurism, the whiz of the current of blood through the narrow opening,—that we might have reasonably expected an indication through the instrument. If it were very effectual in any case, one would naturally suppose that it would be so in this. But practitioners at home seem to contradict this; and the authorities abroad say that it is exceedingly difficult to discover aneurism of the arch of the aorta. This would imply that the stethoscope discovers slight effects of disease, but not material and important changes.

Aneurism of the External Iliac.

The second case to which I have to call your attention, is aneurism of the groin. It is an awful thing, indeed, to see a person dying from internal aneurism; but it is a still more fearful thing when you see a person dying of an aneurism, and you have let slip the opportunity of affording relief; or when relief from art is possible, were you capable of ministering the resources of art! When you see an aneurism of the groin, such as has lately come under your notice, with very slight symptoms, no great tumor, no pain, no lameness, no imperfection at all, you would be almost inclined to hazard the opinion, and say that such a case is too trifling to call for a formidable operation. But then you must cultivate the knowledge of this subject; you must anticipate and know what is about to occur;—that when an artery has once given way, spontaneous cure does not take place in one case in a hundred; that the tumor increases; the circulation becomes obstructed; the tumor bursts, and bursting, produces the most lamentable effects. It is only when you reason, and the imagination presents the latter stage —the final close of the scene—that you feel a conviction of the necessity of the operation which you have seen performed.

I hope you perfectly well understand to whom you are indebted for this operation —for this enlargement of your field of usefulness—viz. Mr. Abernethy. In the early part of his life, he was just the example that you should take; but in the latter part of it he became more negligent. When I first knew him, he was a most intense student: he had a great desire for improving his profession; he was possessed of the highest possible faculties of mind suited to the accomplishment of his object, and the greatest zeal in its prosecution. One of the circumstances for which you are indebted to him is the power of saving life in the condition in which the man is. I can imagine him thinking about it, and revolving the principles of Mr. Hunter, and the evidence of free inosculations brought forward by Mr. John Bell; at last performing the operation; but failing in it—failing in it again—and then at last successful. If he had been a man of common understanding, he would have said, "I shall imitate Mr. Hunter here, and tie the external iliac above the tumor;" and when it had failed, he would have resigned it. But what I most admire in Mr. Abernethy is, that although there was no man with whom I have been acquainted in my walk through life, who had less desire of doing great operations, yet in this he had encountered every unfavourable circumstance—such as the communication between the incision and the sac—the bursting of a vessel—and the death of the patient —yet did the acuteness and philosophical cast of his mind enable him to see that the failure was from an accidental circumstance, and not a necessary consequence of his method: he saw the causes of failure, and by avoiding them, established the operation of tying the external iliac artery in the inguinal aneurism as one of our regular operations—one which you may be called upon to perform.

Perhaps I should here point out the circumstances that are to be attended to in this operation. In all operations for aneurism, the leading rule is to take care that you do not interfere with the tumor: it is not that the operation should be performed, as Sir Everard Home said, upon a part of the artery free from disease, that we ope-

rate high. You must know that an artery is more diseased the nearer it is to the heart, and, therefore, if you tie the artery nearer to the heart, you will be going more on those trunks which are apt to be ossified, rather than removing the ligature from the diseased part. This idea of securing sound artery to operate on is not the object; it is that you should, with a neat, decided incision, cut down upon the artery with the least possible disturbance of the circulation of the limb, and without engaging the aneurismal sac in the inflammation which must necessarily arise. As sure as inflammatory action is excited in the aneurism and surrounding parts, so surely do you lose the advantages of Mr. Hunter's operation; for then the limb becomes tumid, effusion takes place, pressure affects the collateral vessels, coldness supervenes, and a want of circulation in the foot: and on this subject I have to repeat what I said lately, on tying wounded arteries—tie the vessel neatly, without disturbing the circulation, and the circulation will certainly be re-established by collateral arteries; of which we have an extraordinary proof in the present case.

In performing the operation, the incision is made from Poupart's ligament, in a direction upwards, along the course of the artery, as if you were about to cut into the abdomen, which you are careful not to do. Having made the incision something more than three fingers' breadth in length, you may come to the aponeurosis or external tendons of the descending obliquus; you then separate the fibres of the tendon a little, cutting between the fibres, so that you may introduce the point of the directory below and across the fibres of the tendon; so that running the bistoury along the directory, you may divide the tendon in the direction of the first incision. Having done this, you find the internal obliquus and transversalis muscles exposed, and under them you place the directory again, and divide them. The next part of the operation is difficult and hazardous: you are not cutting into the abdomen, as would appear at first, but, having cut through the abdominal muscles, you are to take care that the fat and cellular membrane external to the peritoneum, together with the peritoneum itself, shall be pushed up. Now the fingers of the operator go deep below the peritoneum and behind Poupart's ligament; you see no farther—you conjecture how the operator is engaged—you remember that a strong fascia still covers the artery. The great error which, on former occasions, I have seen committed, is that of forgetting this fascia, and attempting to pass the needle round the artery before the fascia was sufficiently opened. The fascia, then, is to be *scratched* with the silver point, not cut; and by repeated scratching, it is at last opened, and when opened, though it was impossible before, it is now comparatively easy to put in the point of the fore-finger and thumb, and lay hold of the artery, disregarding the nerve which is on the outside and is removed from you, but being especially careful of the vein which is on the inside.

So far I speak of what you have seen, and I must now acknowledge, upon the very principle with which I set out in addressing you, that it is especially necessary to be honest—that I never had so serious an alarm in my life as at this period of the operation, when I saw the blood welling out from the bottom of the wound. I cast about as to what was to be done, because I knew that if this were venous blood the vein must be tied, and I believed that death would have been the indirect consequence of tying it. I never was more relieved than on seeing that the blood was arterial, and of course came from the artery, and I was pleased beyond measure with my friend and colleague, when I found that the very circumstance which would have cowed and rendered useless the hand of many men, only shewed you, and shewed us all, the vigour of his character—the resolution and decision which enabled him at once to lay hold of the vessel, and to continue to hold it till it was tied above and below. Dexterity of hand, and ingenuity, possess no value compared with that manliness of character which enables the surgeon to summon up all his resolution on a trying occasion; indecision at such a moment would have been disastrous to the patient, and would have brought disgrace upon us all*.

This you saw, and the source of the blood was the cracking or bursting of the artery close to the portion of ossification.

There are other circumstances in this operation to which I must more particularly draw your attention. After the ligature was applied above, the hæmorrhage continued; and I hope you are fully aware of the importance of that fact. On reflection, you will see with what advantage you come to the study of this subject, compared with those who investigated it thirty, forty, or fifty years since. The idea was, that an artery threw out its blood with an uncontrollable degree of violence—that is, men saw an artery, for example, in the wrist, bleeding furiously, and with difficulty suppressed it; and so they imagined that an artery at the groin, more especially the external iliac, must bleed with an uncontrollable force. Some most ingenious members of our profession were deceived,

* Mr. Arnott was the operator.

and I will tell you how. In an operation upon the thigh, they compressed the artery at the groin. I have seen a man bearing upon the artery, and another bearing upon the top of him, yet the blood flowed; and so the idea was still entertained that the artery was so exceedingly active as to overcome all this accumulated pressure. It was no such thing; it was only a proof of one of the most important circumstances, and one which should, if properly understood, have given the members of the profession perfect satisfaction and freedom to tie any artery they chose. The blood was returning from below; it was not coming through the main vessel; but the vessels of the hip, of the thyroid hole, were returning the blood circuitously into the vessels of the thigh, and so back by the wounded artery. I need not go into the circumstances that first convinced me of this, but I may state the following case. A man was wounded in the artery of the groin, and he (a resolute fellow) took hold of the integuments, and so held the wound together with his own hands, and sent for a surgeon. When the surgeon arrived, he said, "My good fellow, what can I do if you hold the wound in your hands?" —"Oh," replied the man, "if I let go, the blood will spout out all over you, and I shall die." The surgeon at last prevailed upon him to let go, and presently the blood spouted out; and as you are aware that a few ounces of blood, lost direct from the heart, will cause a man to faint, while a pound or more may be taken from a remote part, without any such effect, so when this great vessel threw out its blood, pressure was suddenly taken off the vessels of the heart, and instantly the man fell back in a faint. What was wrong on the part of the surgeon, was insisting on the poor fellow, who had most sense of the two, letting go his hold before matters were arranged for action, and much blood consequently lost. The artery was at length tied, and the surgeon went away. You anticipate what did occur: presently hæmorrhage came on again. The surgeon was not aware, as you are by the very occurrence of to-day, that the inosculation is so free that the blood must flow by regurgitation where there is an open wound. This second hæmorrhage decided the poor fellow's fate.

You perceive, then, gentlemen, how knowledge and presence of mind have been happily combined in our operation on this occasion. By laying hold of the artery at the point where it burst, only a few ounces of blood were lost, and by holding it until the ligature was placed, first above and then below the wound, all was secure.

I mentioned the apprehension that I had lest the blood should come from the vein, and I will tell you why. You know that when a great vein is wounded above the valve, it is equal to a wound of the heart itself. You are aware, as veins contract in size, the blood must necessarily flow more rapidly through these contracted tubes—that it flows very languidly in the extremities, because their united calibre is so much greater than the veins near the heart. But if a vein which carries the whole blood to the heart be not larger in diameter than the aorta, it is clear, without much demonstration, that the blood must pass as rapidly through the vein as through the aorta, in order that the circulation may continue; and if the vein be wounded, there will be a great discharge of blood from it, because it will come directly and unimpeded, the wound being above the valve. I shall relate a circumstance that occurred under the eye of the late Mr. Alcock. As he was walking through the Horse Guards, a lad, in the act of climbing over the railings in the park, fell: he had his knee upon the horizontal part of the railing; his knee slipped, and the upright spike ran into his groin, under Poupart's ligament, and into the external iliac vein. Of course there were immediate, though unavailing, attempts to assist him, as in all cases of this sort; every one being desirous of rendering aid, a crowd jostled around him, but nothing was done; and with malediction on his lips, the lad expired. Mr. Alcock, a very excellent surgeon, and forward in his profession at that day, forced himself into the midst of the crowd, but too late to be of service: the lad died as if the heart itself had been wounded.

I must here break off abruptly: I have no more to say respecting this case, because it is in progress; but I am very sorry to state that symptoms, unconnected with the aneurism, have taken place, which, I am afraid, will hereafter lead us to make more particular remarks upon it.

Note. 12th January.—After some threatening symptoms of peritoneal inflammation, this man has reaped all the advantage of his resolution, and is perfectly recovered.

MIDDLESEX HOSPITAL.

(CASE ABOVE ALLUDED TO BY SIR C. BELL.)

Inguinal Aneurism—Ligature of the External Iliac—Rupture of the Vessel during the Operation—Cure.

William Knee, 36 years of age, was admitted December the 12th, with an aneu-

rism at the top of the left thigh, close to Poupart's ligament. Its size was that of a turkey's egg. A small swelling was first observed in this situation about eight months ago, whilst he was at Florence; and he supposes it to have been occasioned by his leg and thigh having been stretched backwards, as he was getting out of a boat six weeks previously. Being a gentleman's coachman, he continued to drive as usual; but latterly the swelling became more painful, especially when handled, and slowly increased in size. He was sent to England to be operated on; and having brought a letter from the surgeon under whose care he was, to Mr. Arnott, he was received into the hospital about three weeks after his arrival.

He had not suffered pain from the journey. He walks lame—*i. e.* he lifts the whole of the left lower extremity forwards without flexing the thigh. He states that this limb becomes cold if not in motion, or near the fire; in other respects he is in good—in florid health. The tongue is clean, and the evacuations from the bowels are natural in appearance. His pulse is quiet; the action of the heart and lungs regular; but some of the stethoscopists assert that the aorta is heard over a larger space than is natural. Having been domesticated five days in the hospital, the operation was performed on the 17th of December.

An incision was made nearly perpendicular to Poupart's ligament, the lower extremity commencing a little above it, and just over the outside of the artery. The external, and the outer part of the internal oblique muscles were divided with the knife simply; but the internal fibres of the latter muscle conjoined with those of the transversalis, were divided partly upon a director, partly on the finger carried under them. The peritoneum being then displaced, the artery was readily found; felt, but not seen. The point of a silver knife was now used to divide the fascia a little on each side of it, and an attempt was made to carry the needle under the vessel, from the inside outwards; this not being easily accomplished, it was carried beneath it from without inwards; but when the ligature was laid hold of by the dressing forceps (for it was too deep to be seen) it was found that the threads, three in number, of which it was composed, had got entangled, so that it could not be drawn round the artery. Another needle and ligature was then called for; but instead, Weiss's aneurism needle was handed to the operator. In passing this, a thicker instrument, round the vessel, more force was required; and as its point was pushed up on the inner side of the artery, the wound suddenly filled with blood, which was, however, directly stopped by the operator, who, with admirable presence of mind, seized the artery with his finger and thumb, and completely commanded the hæmorrhage, observing at the same time, "the artery has given way; there is a small ossified part where I can feel the aperture. I must apply a ligature above and below it." This was done; Mr. Arnott retaining his hold of the vessel with one hand, and carrying the common aneurism needle under it with the other, first above the pinch of the finger and thumb, and then below. Where the *upper* ligature was applied, Mr. Arnott stated that the coats of the vessel felt quite healthy: the *lower* one was placed just below the patch of ossification, which was represented to be of a small size on the inner side of the vessel. Previous to tightening the latter ligature, the pressure being slightly remitted, the blood flowed freely (of course from the lower end), shewing that the anastomosing circulation was already in full operation, but pulsation in the aneurism had now ceased, and never returned.

Two hours after the operation the patient complained of the leg (on which a worsted stocking had been drawn) feeling cold. In the evening and the next morning it was warm, apparently more so than the other. Towards midnight he complained of pain shooting from the groin towards the chest, and, as the pulse was rising, sixteen ounces of blood were taken from the arm. On the following day there was slight traumatic fever, and in the evening, as he felt pain in the abdomen, thirty leeches were applied; an aperient draught not having operated, two oily injections were given, which brought away sufficient evacuations. On the evening of the 19th, and on the morring of the 20th, he complained so much of twisting pain round the navel, attended with hiccup and tension of the abdomen, that the house-surgeon took twenty ounces of blood from his arm, which was buffed, but not cupped; leeches were afterwards applied, and calomel, in two grain doses, was given every two hours.

On the 21st, the symptoms being removed, the calomel was stopped, and all medicine discontinued. From this time the case proceeded favourably. At night on the 26th—*i. e.* on the sixteenth day from their application—the ligatures came away. On the 28th, he was ordered a chop and a couple of ounces of wine. The wound is now (January the 12th) almost healed, and the aneurism considerably diminished in size.

GUY'S HOSPITAL.

Lithotomy.

If any mode of operating on any part of the body has reached perfection, it is that of lithotomy in the hands of Mr. Key. The rapidity and certainty with which he seizes the stone, cannot be excelled. The patient, who was operated upon on Tuesday, so as to lead to these remarks, was a man of the middle age, of a dark swarthy complexion, of middle stature, and by no means corpulent. Mr. Key, as is his usual custom (as soon as the patient's hands and feet were bound together), passed the straight staff into the bladder, to satisfy himself of the presence of the stone: this part of the operation is not the least worthy of notice; for the extreme ease and rapidity with which it is done must strike the most superficial observer. The staff was held by Mr. Morgan; and from the first incision to the removal of the stone, only *forty-five seconds elapsed.* The second incision momentarily followed the first; the knife then lateralized and carried into the bladder, the fore-finger of the left hand was then introduced into the wound, the stone felt, and the forceps were then passed along the finger as a guide. The stone was immediately seized, and found to be the size of a small walnut. It was formed of an external brittle coat, of a light colour, and probably was one of the phosphates; whilst within it was much darker, and appeared to resemble the lithic acid, being of a reddish brown colour. At the moment that it was passing the external wound the crust broke in halves, one of which fell on the floor; the other was retained in the forceps, with the darker central portion. The patient was immediately removed to bed, but appeared entirely indifferent to the operation.

Amputation.—The inferior extremity of a child was then removed by Mr. Bransby Cooper, for extensive ulcerative disease of the knee-joint, with anchylosis, the leg being at an acute angle with the thigh. Mr. Cooper practised the flap operation; it was well performed, and was completed in rather less than two minutes.

ST. GEORGE'S HOSPITAL.

Ligature of the Femoral Artery.

This operation was performed on Wednesday, by Mr. Hawkins, in a case of necrosis and abscess of the thigh, with sloughing and hæmorrhage, threatening fatal consequences. The patient was better next day, having rallied considerably. The history is very interesting, and we shall give the details when the case is complete.

Talicotian Operation.—A nose was manufactured on Thursday, by Mr. Keate, in the neatest possible style. We shall give details of this case also on a future occasion.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Mr. Key on Ulceration of the Joints.

The paper (which we mentioned was recently read) is the continuation of one published in the last volume of the Medico-Chirurgical Transactions, on the subject of ulceration of the cartilage of joints. In the former part of his paper Mr. Key intends to establish the pathological fact, that the absorption of the cartilage covering the articular ends of bones, is effected by means of a vascular membrane, and not through the agency of its own vessels. For the circumstances under which this membrane is developed, the reader is referred to the volume just quoted. The present observations are on the primary ulceration of cartilage.

The author commences by drawing a distinction between the process of ulceration and that of absorption. He observes, that ulceration has been erroneously regarded as an act of absorption; and that proofs are altogether wanting to establish these processes as being identical. He considers ulceration under all circumstances, whether occurring in soft parts or in the less organized structures, as bones and cartilage, as a process of disintegration, or degeneration of tissue; and that the absorbents are not concerned in the process.

According to his view of the subject, ulceration is analogous to the softening of tubercular deposits in the different tissues of the body, or to the softening of the fibrine in the canals of arteries under inflammation, or to a similar process in the texture of the brain. A change similar to this takes place in the structures that are undergoing the ulcerative process; they are not absorbed, but break down and form a puriform mass, in which the *debris* of the original structure can sometimes be detected. Several examples are addueed to illustrate this process.

There are many circumstances irreconcileable with the opinion that the parts removed by ulceration are absorbed into the system. In the formation of chancre, which is a form of ulceration, the parts contaminated by the poison, under this

view of the proeess, are always taken into the system, and must therefore uniformly contaminate the whole mass of the circulating fluid. Such must be the consequence attending a chancre, if ulceration is an act of absorption,—an absurdity that almost carries with it its own refutation. The action of iodine is another instanee that shews, *ex absurdo*, that this proeess is not an absorbent action. Iodine frequently produces absorption of a node on the tibia, and at the same time checks and heals a cachectic ulcer on the same leg in the vicinity of the node: in this instance the same remedy quickens the action of the absorbents in removing the swelling of the bone, and also checks the action of the absorbents, by healing the ulcer—two opposite actions of one remedy. He instances the decay of a tooth as a familiar act of ulceration, in which the part that is destroyed by the process can be observed in its several stages; and that it is a living action, and not a mere chemical decomposition of the tooth, is proved by the fact that dead teeth do not continue to decay. The distinction between ulceration and absorption may be observed in the spine under the pressure of an aneurism, and under scrofulous disease. In the former, which exhibits the simple effects of absorption, the bone, which is more highly organized than the intervertebral substance, is often extensively eroded, while the less organized fibro-cartilaginous structure is frequently unchanged, absorption requiring a certain extent of organization. In scrofulous ulceration, on the contrary, the intervertebral substance is often extensively destroyed, while the bone is much less affected, ulceration being an act of disintegration, and therefore not depending on a high degree of organization.

Having devoted a large part of his paper to the subject of ulceration, and endeavoured to prove that it is in all respects different from progressive absorption, the author proceeds to apply his doctrine of ulceration to the diseases of joints. He draws a line of distinction between absorption of cartilage, which is a healthy action, and ulceration of cartilage, which is a destructive process.

He observes, that primary ulceration of cartilage, as far as he has seen, is a much less frequent form of disease than Sir B. Brodie describes it; and that he has found, in the earliest stage of joint disease, signs of synovial inflammation, and, more or less, traces of a newly-formed membrane, when the disease has proceeded so far as to destroy the cartilage. He considers the absorption of the cartilage by means of a membrane, as a process set up by nature to prevent ulceration, which is a destructive proeess, and must sooner or later end in suppuration and the disorganization of the joint. Joints are often examined in which (as in the knee) one side has been deprived of its cartilage by means of the membrane, and the other side has gone on to ulceration and suppuration.

The primary ulceration of the cartilage is most frequently met with as a consequenee of a wound of a joint, which is often followed by acute inflammation, and a breaking down of the cartilage, which may be sometimes seen in flakes separating from the bone. In this proeess nothing like absorption is going on: there is often no development of a membrane; and the action is evidently one of disintegration.

This view of ulceration explains the circumstance of suppuration not taking place during some of the most protracted forms of joint disease. Nature endeavours to remove the cartilage by absorption, and succeeds when means are used to keep down inflammation; but if inflammation takes place, and the general health be impaired, the absorbing action ceases, and a process of ulceration ensues, which causes suppuration and ulceration for the removal of the *debris*.

In the observations which the author makes upon joints, it is his intention to describe two modes by which the cartilage of joints is removed under disease, which may be briefly summed up thus:—In ordinary chronic inflammation, either in the synovial membrane or in the bone, the cartilage is uniformly removed by means of a highly organized membrane, developed for the purpose of absorbing the cartilage, which, from its low degree of organization, is incapable of effecting this process. In acute inflammation, on the contrary, this absorbing proeess is either altogether wanting, or is superseded by a process of ulceration under which the cartilage softens down, and the *debris* is carried off by the process of suppuration.

The limits of this abstract do not allow the author's proofs and illustrations to be stated at length; but we have given, we presume, enough to shew the nature of his views, and the manner in which he supports them.

NEW PREPARATION OF THE ACETUM OPII SEDATIVUM.

To the Editor of the Medical Gazette.

Sir,

Having had the honour of presenting a paper to the Medico-Chirurgical Society, which was read at their last meeting, Jan.

13, 1835, entitled, "On the Preparation of the Acetum Opii Sedativum, and its Use, as a Sedative, in the Treatment of Mania Melancholia and Puerperal Mania, with Remarks," I will extract, with your permission, that portion of the paper which refers to the preparation, &c.; and I shall feel honoured by its insertion in your valuable journal, in order that the profession may have the opportunity of preparing and giving it a trial; it being considered as highly deserving of the same, by so eminent authorities as Drs. Elliotson and Paris *. To Dr. E. I am indebted for its name.—I am, sir,

Your obedient servant,

J. H. Horne,
Surgeon, &c.

5, Gerrard-Street, Soho,
Jan. 14, 1835.

Formulary.—I take three times the quantity of the best opium, reduced to fine powder, that is ordered by the London Pharmacopœia for two pints of tincture; add to the opium two pints of dilute acetic acid; after they have digested a few hours, add to them six or eight pints of rectified spirits of wine; macerate about seven days, then carefully filter, in order to separate the insoluble parts of the opium. Introduce the liquor into a retort, accurately closed, and distill off the spirit. The product in the retort, after the spirit has all passed over, is the required *acetum opii sedativum.*

If the distillation be carefully conducted, the result will always prove of one uniform strength — 1 ♏ equivalent to iij♏. tincturæ opii, and free from spirit, and will keep unchangeable for an indefinite time. The acetum opii sedativum will be found the same, or very similar, to Mr. Battley's liq. opii sedativus (except in the strength, which latter falls short, according to the opinion of our most able experimentalists, as nearly j. to ij. instead of j. to iij.); a preparation too well known to require describing, except in regard to its mode of formation, which the preparer, in spite of his ranking as a scientific druggist, has hitherto kept a profound secret: should this slight effort of mine be the means of eliciting that secret, my object, in part, will be attained.

The rationale of the process may be briefly stated as follows. The acetic acid unites with the morphia of the opium, and forms an acetate of morphia, which is held in solution by the diluted acid; the remaining ingredients of the opium, acted on by the rectified spirits of wine, are extracted, and detained by the acid, after the spirit has been distilled over. I shall be happy to give a full description, if required by any of your numerous correspondents, should the subject be considered of sufficient interest to be allowed to excite inquiry in your useful and scientific journal.

* In commendation of the process and preparation, I am proud to add Dr. Paris's valuable testimony:—

"Sir,—I do not see any objection to the process you have suggested, for obtaining an acetic solution of the active matter of opium: the product is certainly highly distinguished by its narcotic odour and flavour. I think it merits a trial, for we cannot be too well provided with a variety of forms of so important a medicine.

"Yours, &c.

"J. A. Paris.

"*To Mr. Horne, Jan. 7,* 1835."

EFFECTS OF LIGHTNING—RUSSIAN TREATMENT.

The *Medical Gazette* of St. Petersburgh gives an account of the successful treatment of a soldier who was struck by lightning. Two pounds of blood having been taken from his arm, he was buried up to the neck in earth. Although he was perfectly cold before, he came to himself in about five minutes. He was then carried to the hospital, where only tea and gentle aperients were administered to him. On the following day he was able to walk, and to answer all the questions put to him by the Grand Duke Michael and Sir J. Wylie, who visited the hospital. He is now quite recovered.—*Times.*

MR. PHILLIPS'S PRIZE ESSAY.

From the report of the proceedings of the Institute of France, we learn that of fifty-seven memoirs forwarded by the competitors for the Monthyon legacy, the commission had decided that that of B. Phillips, Esq. of Wimpole-Street, was entitled to the first place.

The subject of his essay was "A Mode of Curing Aneurismal Tumors without Ligature or the Knife;" by passing through the sac, one, two, or more threads of silk.

Supported as this invention is by the sanction of the Institute, we hope soon to be enabled to record its successful adoption in practice.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO RECEIVED CERTIFICATES JAN. 15, 1835.

Patrick Benson, Roscommon, Ireland.
George Cooper, London.
Charles Collambell, London.
Montgomery Robertson, Scotland.
Henry Shaw, Exeter.

POSTERIOR DECUSSATION IN THE MEDULLA OBLONGATA.

[Communicated by MR. MAYO.]

19, George-Street, Hanover Square,
Jan. 15, 1835.

DEAR SIR,

I HAVE this day, in the presence of Mr. Kiernan, carefully looked at the specimens, sent by Sir Charles Bell for exhibition, in the museum of the College, in proof of the existence of a posterior decussation in the medulla oblongata, and to which the attention of physiologists has been called by a letter from Sir Charles to you, in the GAZETTE of last week.

The specimens which were shewn me were four in number: two in separate closed bottles; two together in one bottle, with a glass stopper, to admit, I suppose, of their being taken out and examined. Of these four specimens, the two in the closed bottles, and one of those in the open bottle, display nothing satisfactorily. They exhibit an *adhesion* only of medullary fasciculi, but nothing like *crossing*, *or decussation.* The appearances in them are such as may be produced at any part of the posterior fissure of the cord, by *favouring* in the process of separation some membranous adhesions, and *dividing* others.

The fourth specimen, however, displays on the posterior aspect of the medulla oblongata a strong and distinct decussation. This specimen I very carefully examined, taking it from the bottle, and identifying all the parts; when I distinctly saw two things in it, which any body else may see: first, that *this unquestionable decussation is not in the same place with the indistinct appearances in the other specimens;* secondly, that the decussation here really displayed *is only a posterior view of the decussation of the anterior pyramids.* The depth to which the crossing fibres of the anterior pyramids thus penetrate, has been shewn in figures, some years ago, in my plates of the brain, and recently in my pathological lecture in the last number but one of the MEDICAL GAZETTE.—I am, my dear sir,

Yours very truly,
HERBERT MAYO.

To Mr. Clift,
Curator of the Hunterian Museum.

LITERARY INTELLIGENCE.

In the press, A Practical Compendium of the Diseases of the Skin; including a particular consideration of those the most inveterate and intractable of these diseases, and of those characterized as syphilitic. —By Jonathan Green, M.D., M.R.C.S., &c. &c.

In the press, and nearly ready, the third edition, with important additions, of the Pathology and Diagnosis of Diseases of the Chest. Illustrated chiefly by a rational exposition of their physical signs. By Charles J. B. Williams, M.D.

Preparing for speedy publication, 4to. with numerous coloured plates, A Treatise on the Formation, Constituents, and Character of the Urinary Calculus. By John Green Crosse, Esq., Surgeon to the Norfolk and Norwich Hospital; being the Essay for which the Jacksonian Prize for 1833 was awarded by the Royal College of Surgeons in London.

NEW MEDICAL WORKS.

Tables and Diagrams illustrative of Chemistry and Pharmacy. By John Murray, M.D.

Records of General Science. No. 1. January 1835. A new monthly periodical, edited by Dr. R. D. Thomson.

Explanation of the Anatomical Atlas of Dr. Weber. Part VI.; being the accompanying letter-press to Weber's Plates, translated into English. Part VII. is in preparation. Schloss.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *Jan.* 13, 1835.

Abscess	5	Gout	2
Age and Debility	36	Hæmorrhage	5
Apoplexy	4	Hooping-Cough	18
Asthma	17	Indigestion	1
Cancer	4	Inflammation	26
Childbirth	7	Bowels & Stomach	5
Consumption	69	Brain	6
Convulsions	27	Lungs and Pleura	14
Croup	1	Jaundice	2
Dentition or Teething	10	Liver, diseased	6
Dropsy	13	Measles	23
Dropsy on the Brain	6	Mortification	3
Dropsy on the Chest	1	Paralysis	3
Erysipelas	2	Small-Pox	6
Fever	7	Spasms	6
Fever, Intermittent, or Ague	1	Stone and Gravel	1
Fever, Scarlet	14	Unknown Causes	38
Fever, Typhus	1	Stillborn	10

Increase of Burials, as compared with the preceding week . . . 70

METEOROLOGICAL JOURNAL.

Jan. 1835.	THERMOMETER.	BAROMETER.
Thursday . 8	from 24 to 38	30·09 to 29·90
Friday. . . 9	29 49	29·80 29·69
Saturday . 10	38 52	29·54 29 51
Sunday . . 11	40 54	20·49 29·48
Monday . . 12	41 51	29·49 29·58
Tuesday . 13	42 53	29 69 29·55
Wednesday 14	38 52	29 46 29·43

Wind variable, W. and S.W. prevailing.
Cloudy, with rain at times on the 9th and 11th; sunshine frequent during the four last days.
Rain fallen, ·375 of an inch.

CHARLES HENRY ADAMS.

W. WILSON, Printer, 57, Skinner-Street, London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, JANUARY 24, 1835.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture XVII.

DISEASES OF THE PARENCHYMATOUS STRUCTURE OF THE LUNGS.

ADVENTITIOUS DEPOSITS—*continued.*

I have thus, gentlemen, concluded the description of the tubercular adventitious deposit, and have directed much of your attention to that subject, in consequence of its great importance. We now proceed to the other species of accidental formations which occur in the lungs: they will occupy much less of our time, because of their greater rarity, of their signs being scarcely known, and their mode of treatment being very imperfectly understood.

You will recollect I divided the adventitious deposits into two classes—the one of inorganic, the other of organic substances. Tubercles, and the formation I am next to describe, are included in the first class; the second, or organic, contains cysts, hydatids, medullary sarcoma, and melanosis. As these deposits occur but rarely in the lungs, I shall be brief in my description of them.

Cartilaginous and Osseous Adventitious Deposits.

Cartilage.—We have already spoken of the cartilaginous nature of the tubercular cicatrix, of the semi-cartilaginous structure of the lining of fistulous tubercular excavations, and of the formation of cysts of a similar character, occasionally enveloping tubercular matter. There are also found cysts of an analogous structure occasionally investing the adventitious deposits, which we shall presently describe; and finally, portions of cartilage, of irregular forms and of moderate volume, are sometimes seen in the lung, presenting here and there points of ossification.

Osseous deposit.—Accidental ossific deposits never present the same physical appearances, or proportion of chemical elements, as ordinary bone: no fibrous or cellular texture is seen within them, and the quantity of earthy matter is always greater in these formations than in healthy bone. The gelatine in them is sometimes so slight, that these concretions are like small stones, from which they have been called *calculous* or *tophaceous;* sometimes even there appears to be no admixture whatever of gelatine, so that the deposit is like half-dried chalk or mortar: hence Laennec has denominated the first kind *imperfect ossification*—the second, *cretaceous concretion.*

Imperfect ossifications are found encysted or non-encysted. The first rarely occur in the lungs; they vary in size, from a pin's head to a nut, and adhere strongly to their cysts. The cysts are of a semi-cartilaginous structure.

The non-encysted, of which these are specimens [presenting them] are very irregular in their forms: their surfaces are uneven and rough; their centres white and opaque, of a calculous appearance; and they are easily reducible into powder by a hammer; their external parts are of a yellowish colour, are slightly transparent, as if horny, and are broken down with difficulty.

These ossifications are occasionally found in the pulmonary tissue, or in the midst of a cartilaginous mass, as of a tubercular cicatrix; they are found also in

tubercles, particularly those developed in the bronchial glands. When a mass of tubercles containing these petrous substances soften, the concretion will remain free in the excavation until a bronchial orifice of sufficient size opens into the cavity to admit of its expectoration.

Cretaceous concretions are of much more common occurrence. [Several specimens were shewn.] They present the appearance of chalk slightly wetted, or they are mixed with so much fluid as to render them like mortar more or less thick. In the latter case they are always encysted; in the former most frequently, but not always. When this matter is pressed between the fingers, it appears to consist of an impalpable powder; but frequently it contains small fragments of a firmer texture, giving the sensation of a mixture of small grains of sand with chalk more or less wetted.

Their cysts are usually cartilaginous; they are spheroid, or irregular in form. Laennec saw one shaped like a pyramid of four sides. The rounded cysts are sometimes themselves imperfectly ossified, and present the characters of the external surface of the stony concretions previously described—that is, they are very hard, and slightly transparent, like horn. Occasionally several concentric cysts are seen enveloping each other, either of a bony or cartilaginous structure; they are usually separated by layers of cretaceous matter.

A half liquid cretaceous substance is often found in the centres of tubercles, and particularly in those contained in the bronchial glands. This matter may easily be distinguished from the tubercle by its opacity and whiteness; and if it be dried, it becomes still whiter, and acquires more cohesion.

Laennec observes, that these concretions are never larger than an almond: you perceive, however, one on the table larger than a walnut. This matter is often met with infiltrating the portion of a lung around a tubercular cicatrix.

Causes.—Cullen and others have attributed these formations to the inhalation of certain powders; and they state that starch-makers, lapidaries, stone-masons, coachmen, &c., are most subject to them. A very simple and convincing answer may be given to this opinion—which is, that then the chemical composition of these concretions should be as various as the different kinds of powders which persons in these occupations inhale; but their chemical nature is always the same; they are always composed of *phosphate of lime.* Were any other proof of the incorrectness of this notion necessary, it might be inferred that these powders would remain and accumulate in the bronchial tubes; this, however, never occurs: the dust we inhale daily becomes entangled with the tracheal and bronchial mucus, and is expectorated.

Laennec believed that in the greater number of cases these ossific substances were the result of nature's efforts, who, in cicatrizing pulmonary excavations, has deposited in too great quantity the calcareous phosphate necessary to the formation of the accidental cartilages which constitute pulmonary fistulæ and cicatrices.

This explanation is insufficient, as he himself partly admits, inasmuch as cretaceous matter may exist in the centre of a tubercle before it has softened; and it may be found also disseminated in various parts of a lung otherwise healthy, in neither of which cases has there been a semblance of previous cartilaginous formation; nor is the phosphate of lime necessary to the accidental deposit of cartilage, although it be frequently superadded to it.

The occasional expectoration of cretaceous matters is the only sign we possess of the probable presence of a still greater quantity in the lungs.

Cysts.

By a cyst is meant an accidental membrane forming a sac without an opening, usually round, but sometimes irregular in form, and containing a matter more or less liquid, secreted by the membrane forming the cyst.

The cysts containing liquid matters vary as to the nature of the membrane or membranes which compose them: thus, they may be formed of a mere serous membrane, like the pleura or peritoneum; they are then thin and transparent, appearing like a vesicle sometimes not larger than a pin's head; at others of the size of a walnut. These are called *serous cysts.* I have never met with them in the lungs, but generally in the kidney [presenting preparations of them.] Occasionally the cyst is formed of a thin membrane analogous to a mucous membrane; these are often imperfectly surrounded by a layer of fibrous matter, or condensed cellular tissue, uniting them to the neighbouring parts: they may be called *mucous cysts.*

Sometimes the cysts containing liquid matters are formed of fibrous and condensed cellular tissue, enveloped more or less extensively by a cartilaginous layer, which is itself ossified at many points. The internal surface of these cysts is unequal, rough, and lined here and there by a semi-concrete albuminous or fibrinous substance. These are called *composed cysts.*

These cysts are the rarest of all the accidental deposits in the lungs of man; the serous forms are not infrequent in those of oxen and sheep. Laennec met with but a single instance of a composed cyst in the

human lung, and that probably had contained an hydatid; it was situated in the right inferior lobe, large as an apple, and of very irregular form. Its parietes were from two to four lines thick, lined internally by a fibrinous or albuminous substance of a whitish yellow colour, and similar in appearance to the middle coat of an artery; its external surface was of a perfectly fibrous texture, like to that of a tendon; here and there it had somewhat the structure of cartilage, in which there were many osseous points placed in various directions, some of which penetrated naked into the cyst, others plunged into the pulmonary tissue, which was, however, protected by a thick fibrous layer covering the projecting spiculæ of bone. The cyst contained a liquid yellowish matter.

We have no specific signs of the presence of these accidental formations.

There are also cysts containing solid matters: I have described two species enveloping tubercular and cretaceous deposits; I shall speak of the rest in describing the substances they enclose.

Hydatids, or Acephalocysts.

These worms have long been confounded with cysts; they consist of a simple bladder of an ovoid or spheroid form, soft, and of the appearance of half-boiled white of egg; their parietes are usually uniform, although sometimes of unequal thickness; they are diaphanous, or semi-transparent; they are colourless, or of a milky tint, or slightly red, yellow, green, or gray.

The cavity of the hydatid always contains a fluid, which is usually limpid, but sometimes a little yellow or red. Frequently small hydatids are attached, like buds, to its internal parietes; these buds may be seen of various sizes, from a pin's head to a completely formed hydatid. When they have arrived at the latter state, they fall off. A single hydatid may contain a considerable number of others in various degrees of development. This mother hydatid, as it has been called, sometimes acquires an enormous size. I have seen them of a capacity equal to three gallons.

[A fine specimen of an hydatid which had been only an hour extracted from the human liver was shewn, in which the smaller hydatids, some attached, and others separated from the mother hydatid, were extremely distinct.]

Rudolphi has denied that the hydatid is an animal, from the extreme simplicity of its organization; Laennec asserts that they are organized beings; Baron Percy, and my friend Mr. Langstaff, the latter of whom has paid great attention to the subject, declare that they have seen their contractions.

Hydatids are always contained in cysts, by which they are separated from the surrounding parts. The cysts are usually fibrous, although cartilaginous and osseous matters often enter into their composition. Their internal surface is commonly unequal and rough; most frequently it is lined by an opaque, semi-concreted, yellowish albuminous matter.

A single cyst may contain a number of hydatids; they are then found floating in a fluid, either limpid or troubled, yellow or red. If it contain but one hydatid, it completely fills its cavity.

The natural cure of this hydatid takes place from its spontaneous destruction; it then bursts, its fluid escapes into its cyst and becomes absorbed, and the cyst itself, no longer subjected to distention by the increase of the hydatid, gradually contracts, its capacity diminishes, and it is probably ultimately obliterated by the adhesion of its parietes to each other.

Hydatids may develop in many of the organs; and although they are rarely seen in the lungs, yet authors have occasionally described them situated there.

The signs of the presence of hydatids in the lungs are extremely obscure; they would be the same when arrived at a considerable volume as those of effusion into the chest; and it might be impossible to distinguish the two diseases. Hydatids have been expectorated; in that case there would be no difficulty; and the previous absence of the respiratory murmur, and the dulness on percussion, would indicate their original situation. The result of the treatment of this disease is as uncertain as its signs: Laennec imagined, that since sheep, who are so frequently affected by certain species of these worms, producing in them the *rot*, are cured by salt pasturages, that salt might be used with advantage in these cases by man.

Medullary Sarcoma.

This deposit has received a variety of names, as spongoid inflammation, fungus hæmatodes, soft cancer, cerebriform cancer, fungoid disease, encephaloïde, cephaloma.

Medullary sarcoma was first particularly described by Burns, of Glasgow, in 1800; since which period several have given their views of the disease, as Abernethy, Monro, Hey, Sir Astley Cooper, Mr. Wardrop, Laennec, Cruveilhier, Andral, and Dr. Carswell. The last author, to whom the medical public is also so much indebted for his splendid plates on morbid anatomy, has, I fear, generalized incorrectly, in including in the same genus the hard and almost inorganic scirrhus with the soft and highly organized medullary sarcoma. I have carefully examined the different

authors upon this subject, and find that the description given by Laennec accords best with what I have seen, and what I shall this evening shew you.

From the resemblance which this deposit has to the cerebral substance, Laennec has denominated it *encephaloïde*. He describes it as existing under three forms:—1, encysted; 2, non-encysted; 3, infiltrated into the tissue of the organs.

In whatever mode this matter is primarily deposited, when it is fully developed it is homogeneous, and very similar to the substance of the brain; it is here and there slightly tinted with a rose colour. Cut in fine slices it has a slight semi-transparency, but is opaque in the mass. Its consistence is similar to that of brain, but is less supple, and breaks more easily. When the deposit has acquired a certain volume, trunks of blood-vessels run along its fissures, and from thence penetrate in ramifications into its substance. The coats of these vessels are thin, and often break; clots of coagulated blood are then extravasated into the medullary mass, presenting a striking analogy with the appearances found in the brain of persons destroyed by sanguineous apoplexy: these extravasations are sometimes so great as to destroy nearly the whole of the adventitious mass, a few portions of its peculiar substance being only left. When this occurrence happens near the surface, and the skin inflames and ruptures, a bleeding fungoid tumor appears, to which the name of *fungus hæmatodes* has been applied. This state has been confounded with tumors formed by accidental erectile productions bursting through the skin.

The mass now softens, and soon arrives at the consistence of a thick paste, and then of thick pus, still preserving its white or rosy tint. When, however, it contains extravasated blood, it becomes of a blackish red colour; the blood soon decomposes, its fibrine concretes and combines with the medullary matter, while the serous part is absorbed. These mixed matters are yet, however, of a deep black red, and present the appearance of a slightly dried and friable paste. Usually some portions of the cerebriform substance still remain, by which the nature of the original disease may be detected. Frequently, too, masses of medullary sarcoma may be found at the same time in different parts of the body, in various stages of destruction.

We now proceed to describe the three varieties in which the deposit is seen.

Variety 1*st*: *Encysted.*—The encysted medullary sarcoma varies in size from that of a nut to a middle-sized apple.

The parietes of the cyst have a tolerably uniform thickness, of about half a line; their colour is grayish white, or milky, and they are more or less transparent, according to their thickness; they are of a cartilaginous texture, although of greater softness, and less brittleness, than cartilage in general.

The cerebriform matter adheres but slightly to the cyst; it is separated into lobules by a delicate and fine cellular tissue, analogous to the pia mater. A number of vessels ramify upon this membrane, and penetrate into the interior of the mass. The coats of these vessels are very thin, easily break, and the effusions of blood I have already spoken of occur. Sometimes the trunks of these vessels, while placed in the fissures separating the lobules, break, and the blood accumulates beneath the cellular membrane, and forms a clot between the membrane and the medullary mass.

It is in this early state that these tumors present the lobular form: the lobes are principally seen upon the surface, and then are very similar to the convolutions of the brain. To detect them, the cyst must first be dissected off.

At this period the medullary mass is firm: if cut in fine slices, it is slightly semi-transparent; its colour is pearly gray, or yellowish. If the tumor be cut into, it appears to consist of a much greater number of lobules than its external form would indicate; these smaller lobules are closely applied to each other, leaving no intervals; their separation from each other is only expressed by red lines of injected cellular tissue. These lines rarely intersect each other, but are arranged in irregular curves.

As the tumor softens, it presents the greatest analogy to the cerebral substance; its texture is now homogeneous; there are no traces of the internal lobules, although the external are perfectly distinct; the vessels on the surface are much larger, and it is at this period that their rupture takes place.

Finally, the tumor becomes still softer; it is now like the brain, in a very humid and pultaceous state. Laennec continues to observe that he never saw the encysted or non-encysted cerebriform tumor soften much more, or its matter to be absorbed or evacuated, so as to leave an excavation.

This variety is commonly found in the lungs, liver, and mediastinum.

Variety 2*d*: *Non-encysted.*—The medullary deposits often appear in this form; their size is extremely variable, existing as a mere point to the volume of a full-sized fœtal head. Their forms are spheroid, ovoid, flattened, or altogether irregular. Their external surface is divided into lobes, although less regularly than in the encysted species. A cellular membrane invests them, and if they be situated where that tissue is abundant, it is very distinct; if

placed in the interior of the organs of the body, the cellular envelope is then scarcely apparent.

The non-encysted masses present, at first, a greater degree of semi-transparency than afterwards; they are almost colourless, or of a slight blue tinge; they are firm, and divided into many lobules; they have somewhat the aspect of fat, but do not grease the scalpel; sometimes they appear rather humid than fatty. After this period, the substance of the tumor becomes opaque and whiter; most of the lines separating the internal lobules disappear; the larger external lobes preserve their primitive texture a longer time, so that they may still be firm, while the other parts of the same tumor may be completely softened.

These tumors may be developed in all the organs of the body, but they are particularly found where the cellular tissue is lax and abundant.

Variety 3d: Infiltration.—Laennec never saw this variety exist in the lungs. It consists in the molecular deposit of medullary matter into the tissue of an organ; at first the points of its formation are small, and irregularly disseminated; these points gradually enlarge, fresh ones accumulate between them, until at last the parenchymatous structure composing the viscus is more or less transformed into a medullary mass. The colour of this mass varies according to the colour of the organ in which the infiltration occurs; thus in the liver, where it is frequently seen, it is white, or of a whitish-yellow tint. The texture of the affected organ is at first somewhat firm, but it finally degenerates into a soft and pappy substance.

There are no specific symptoms by which this disease can be determined to exist in the lungs.

Melanosis.

This very peculiar accidental deposit has been successively described by Laennec, Breschet, Langstaff, Cullen, Carswell, and Fawdington.

In its first state, or, as Laennec calls it, the state of *crudity*, the melanotic deposit has the consistence of a lymphatic gland; its tissue is homogeneous, its colour deep black: as it softens, there may be pressed from it a ruddy thin liquid, mixed with grains, sometimes firm, sometimes friable; finally, these grains, and the whole mass of the tumor, break down, and are converted into a kind of black "bouillie."

Melanosis may exist in three forms: 1st, encysted; 2dly, non-encysted; 3dly, infiltrated into the substance of an organ.

Variety 1st: Encysted.—The cysts are generally round; they vary in size, from that of a nut to a walnut; their thickness is equal, and generally of about half a line, and they appear to be formed of cellular substance alone. They adhere by a fine cellular tissue to the organ in which they are developed, and may be easily separated from it by dissection. The internal surface of the cyst is smooth, but the melanotic matter adheres closely to it; the means by which this union is effected is a fine cellular structure, which disappears as the mass softens.

This variety has been principally found in the liver and the lung.

Variety 2d: Non-encysted.—This has been seen in almost all the organs of the body.

The volume of the non-encysted masses varies from the size of a millet-seed to that of an egg, or they may even become larger. Their form is irregular; they adhere strongly to the parts in which they are contained, although they are sometimes united to them by a delicate cellular tissue which permits them to be detached. In the latter case they are generally of a rounded form.

Variety 3d: Infiltrated.—Sometimes the melanotic matter is deposited in points between the integral molecules of an organ. The appearance of the matter, then, varies according to the colour of the organ in which they are placed, and according to the state of crudity or softening of the melanotic deposit.

In the first instance, the organ is dotted here and there with small black spots, arranged irregularly or in striated forms; as these spots enlarge, they unite to constitute masses of various size and figure. The natural structure of the viscus in which they are placed gradually diminishes, and at last disappears entirely, leaving a perfectly black substance in its place. It is at this period that the adventitious deposit usually commences to soften; if it even should occur before, the natural substance of the organ begins to soften also, and in both cases is destroyed.

Too little is yet known of the special signs of this disease, to enable us to distinguish it when in the lungs.

Black pulmonary matter.—The lungs and bronchial glands are often tinted with a black colour; this is called the black pulmonary matter, and may easily be mistaken for melanosis; and, indeed, is often very difficult to distinguish from it. Laennec has established the following differences:—

Softened melanotic matter tinges the fingers of a black colour, which is easily washed off; but black pulmonary matter, if allowed to dry previously, will remain for many days, even with frequent washings. Black bronchial glands, according to Fourcroy, contain a large quantity of hydrogen and carbon, which are not found

in melanosis; the latter being composed almost entirely of albumen and a peculiar black colouring matter.

Melanosis is evidently a deleterious formation; black pulmonary matter is not: the first produces malignant symptoms; the second is innocuous.

The black pulmonary matter effects no alteration in the structure of the lung, except its colour. When the melanotic matter is deposited in a slight degree, it may produce no other change also. Laennec then gives us the following rules by which we may distinguish them:—

We ought not to admit the existence of melanosis in the lungs, except we meet with masses of a certain nature and volume, already softened, and so placed and formed that they cannot be mistaken for bronchial glands.

We ought not to admit that the lung is infiltrated with melanotic matter, until the tissue of the organ is as dense and hard as that of the liver; but when this density has a doughy character, and the hardness is caused by osseous or cartilaginous points, the colour should be considered as produced by black pulmonary matter.

I have now, gentlemen, concluded the diseases of the parenchymatous substances of the lungs, and shall proceed to those of the third section, or diseases of the pleura.

[This lecture was illustrated by preparations and drawings shewing the different adventitious deposits in their various stages.]

OBSERVATIONS

ON THE

PATHOLOGY OF NERVES.

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[Continued from page 560.]

Excitement may be the result of Mechanical Impulse, of Vascular Congestion or Irritation, of Inflammation, of Structural Disease, or sometimes of mere Functional Disorder.

Having noticed the symptoms and consequences of excitement of a nerve upon the one hand, and of defective energy upon the other, I shall next proceed to consider the causes of each of these conditions, beginning with those of excitement; and from the bare enumeration of these, it must be obvious that they are somewhat numerous, inasmuch as there may be many causes and modifications of mechanical impulse, perhaps of congestion, certainly of inflammation and its consequences, and equally certainly of functional disorder.

That violent mechanical impressions upon the trunks of nerves, in any part of their course, will produce symptoms of excitement in the parts which they supply, has been known from a remote period, and is the foundation of a large proportion of the experiments of physiologists, who have pricked them with a needle, or the point of a scalpel, or pinched them with dissecting forceps, as the instruments most ready to their hands. These experiments have been most commonly made upon nerves of motion, the effects of which are obvious to the senses, as convulsive movements are the result. Upon this point the observation of Haller, and the simple and interesting experiment of Sir Charles Bell, confirmed by those of Magendie, upon the anterior roots of the spinal nerves, are conclusive. "Deinde irritato nervo convulsio in musculo oritur qui ab eo ramos habet*."—"On irritating the anterior roots of the nerve, at each touch of the forceps there was a corresponding motion of the muscles to which the nerve was distributed. Every touch of the probe or needle on the threads of this root was attended with a muscular motion as distinct as the motion produced by touching the keys of a harpsicord†." Again: "on irritating the nerve of the fifth pair at its root," the muscles of the jaw ached, and the jaw closed with a snap‡;" and Mr. Shaw adds, "so as to nip an assistant's finger severely§."—"When the anterior roots singly, or the whole spinal nerve, was pinched by the forceps, or pricked by the scissors, an evident motion was produced on the muscles, not only perceptible to the eye, but when the third or fourth dorsal nerve was touched, the whole scapula moved in the hands of the assistant. . . . . The motion given to the muscles was not the slight tremulous motion arising from the natural irritability still remaining in them, but it was *convulsive and spasmodic*, and followed each successive prick of the scissors||." "The slightest touch on the

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* Elem. Phys. vol. iv. p. 325.

† Bell on the Nervous System, p. 31.

‡ Ibid. p. 35.

§ Ibid. p. 63

|| Note of Experiments performed by Mr. Shaw, by Mr. Cæsar Hawkins.

portio dura, or respiratory nerve, convulsed the muscles of the face, whilst the animal gave no sign of pain*." Such are the evidences of the influence of sudden mechanical impressions upon motor nerves: they not only produce action, but action which, in the language of Mr. Cæsar Hawkins, is "convulsive and spasmodic."—"Convulsio ositur." It is the same with nerves of sensation: the sensibility is augmented, and pain the consequence. If an ass be tied and thrown, and the "superior maxillary branch of the fifth nerve exposed, touching this nerve gives acute pain†." And again: "the cutting of the fifth nerve gave pain in a degree corresponding with our notions of the sensibility of nerves‡." With regard to the spinal nerves, strictly so called, the experiments of Magendie are the most decisive we possess: when he "pinched, stretched, or cut the posterior roots, or the nerves of sensibility, the animal exhibited signs of pain, but not to be compared, in intensity, with that produced by even a slight touch of the spinal marrow at their origin§." Lastly, from experiments upon nerves which minister both to sensibility and motion, these mechanical stimuli produce both convulsive movement and pain; for "when a nerve is pinched, or pricked, the muscles, which it supplies, contract with more or less violence, and at the same time the animal experiences suffering more or less severe‖."

Pathological facts lead to the same conclusions. In the case of a late estimable physician, a spiculum of bone within the cranium, irritating (if we may judge from the effect) a nerve of sensation from its very origin, produced incurable tic douloureux, and ultimately serous effusion, which was probably the cause of death. In many instances, a similar cause operating upon the cerebrum has produced epileptic convulsions; and it is said that a sharp fragment at the end of the bone of a stump has, by coming occasionally in contact with the extremity of a nerve, occasioned the combination of violent neuralgia and muscular spasms—violent, uncontrollable, and painful jumpings of the stump.

* Bell, p. 80.
† Ibid. p. 74.
‡ Ibid. p. 79.
§ Journ. de Physiol. vol. ii. p. 368.
‖ Rapport sur des Expériences relative aux Fonctions du Système Nerveux, par Cuvier.—Journ. de Phys. vol. ii. p. 372.

It has been generally believed that stretching of nerves will produce a morbid development of nervous energy; and this stretching of the medullary filaments constitutes the very foundation and essence of the distinction, adopted by M. Portal, of the diseases of nerves into those of painful and convulsive stretching, and those which are characterized by the insensibility of compression; and he adduces, as illustrations, the opposite conditions of the nerves of the thighs, according as these are distended upon the one hand, or compressed upon the other, by the gravid uterus*. It forms also a most important element in the explanation offered by Mr. Swan, of the painful effects of a partial division of a nerve†, and constitutes the introduction of his chapter on "the compression of nerves;" from which, perhaps, it may be inferred that he considers distension and compression as similar or identical in their influence. "A nerve," he says, "may be extended some way without giving pain or uneasiness; as I have frequently observed in making experiments, when I have passed a probe under the sciatic nerve and drawn this from its situation, and as is shewn in cases of popliteal aneurism, when the swelling may attain some size before much pain is produced. But when a nerve is extended in any considerable degree, pain is excited; and if the extension be increased, the pain is increased in proportion, till at length the nerve begins to ulcerate; and if the pressure be not removed, it becomes almost destroyed by this process‡." From this statement of fact, upon unquestionable authority, I should be induced to draw the conclusion that distension alone is not sufficient to produce excitement of a nerve, the effects of which excitement are generally in proportion to the suddenness with which the cause is applied, excepting in cases wherein inflammation is the result of this peculiar mode of mechanical violence. Then the inflammation which precedes the ulceration, adverted to by Mr. Shaw, is the cause of the suffering induced; but previously to this, paralysis, in its various degrees, is infinitely more common.

This view of the subject derives much support from the observations of Bichat

* Anatomie Medicale, vol. iv.
† On Diseases of Nerves, p. 111.
‡ Ibid. p. 155.

and Bourdon upon the same point. The former contents himself with alleging, in general terms, that sudden distension more completely *interrupts* ("interrompt,") sensation and movement than that which is produced slowly*; the latter alludes to the occurrence of *paralytic* asphyxia, from the tiraillement of the recurrent nerve produced by aneurism of the arch of the aorta, at that part around which this important nerve winds, before it proceeds to its destination†.

The experiments of M. Descot upon this point, appear to me to be inconclusive; or if they justify any particular inference, it would be that distension of the nerve itself is little painful unless carried to the extent of tearing it asunder, or, at all events, without separating some of its filaments by the violence. He distinctly states, that "they may be gradually elongated without any change of their texture, or considerable disturbance of their functions, as in cases of exophthalmia, when it occurs gradually."‡ But he alleges that the functions of the nerve suffer materially when the distension is more sudden, as is the case when the nerves are raised by a popliteal aneurism, as well as in some instances of acute exophthalmia. Cases, however, of neuralgia accompanying popliteal aneurism, admit of another and more satisfactory explanation, as will appear hereafter, from a consideration of some recorded examples of this kind; and as to the "exophthalmie aiguë," it is probable that in such instances the eye has been displaced by inflammation behind the globe, of which the nerves, in all probability, have also partaken. With regard to the experiments which M. Descot instituted with a view to the elucidation of this point, they were accompanied with so much violence to surrounding textures, as well as the tearing asunder of the whole nerve, that it is difficult to ascertain how much "d'une violente douleur" was to be ascribed to the injury of the nerve, and how much to the other mischief inflicted. The latter could not have been inconsiderable, seeing that the nerve, elevated by a blunt instrument, did not give way at the part where the injury was inflicted, but at a distance of five or six inches below that point; and a case of extensive laceration of the arm, by a spinning machine, communicated by M. Beclard, would lead one to suppose that the pain was rather to be referred to the surrounding injury than to the nerve itself, as, notwithstanding that a large nerve was completely torn asunder, no immediate and severe ill consequences followed, and afterwards nothing but the loss of skin interrupted the progress of cicatrization. My friend, Mr. Phillips, of Wimpole Street, also, who is much conversant with experiments of this kind, and with the progress of experimental physiology amongst our continental neighbours, has assured me that in the course of his own experiments upon nerves, he has raised them from their natural position to the extent of from half to three quarters of an inch, with the handle of a dissecting-knife, and although they were nerves which ministered both to sensation and motion, neither suffering nor convulsive movement resulted from the injury inflicted. When the nerve was distended rapidly, a paralytic affection appeared to be the only consequence. This, however, gradually subsided, the nerve apparently becoming accustomed to the elongation of its filaments, and resuming its function, notwithstanding the continued operation of the distending cause.

Another mode of mechanical impulse is that occasioned by a blow upon the trunk of a nerve from any blunt substance, as in the trick common amongst schoolboys of striking "the funny bone" with a key. The ring and the little finger immediately start from their position with a convulsive movement, which is, moreover, attended with a severe and tingling pain. The cause, however, being only temporary, produces only a temporary effect, unless the mechanical violence has been so great as to occasion contusion of the nerve, in which case inflammation is apt to supervene, and to excite a new train of characteristic symptoms.

Other stimuli, if violent in character, or sudden in application, may also excite a nerve to excessive and anormal exertion of its influence. So electricity and galvanism directed suddenly, and in their concentrated form (as from an electric or powerful galvanic battery), upon the trunk of a given nerve, will excite to involuntary movement the muscles which it supplies, even for some

* Anat. Gen. tom. i. p. 160.
† Principes de Physiologie Medicale, partie deuxieme, p. 678.
‡ Des Affect. Loc. des Nerfs, p. 46.

time after the death of the animal; and they are amongst the most familiar remedies for defective energy. Concentrated acids have also, in the experiments of physiologists, been frequently applied to nerves exposed by dissection, and convulsive movement has been the result. "Dum nervum quemcunque irritavimus sed chemico veneno minus, scalpello melius, continuo is musculus, quem nervus adit, contrahitur, et motu, ad quem factus est, defungitur, artumque suum aut flectit, aut extendit, aut alio quocunque modo emovat*." Even cold may be enumerated amongst such chemical stimuli acting by direct application; for Haller expressly asserts, that touching a nerve with a cold sponge will occasion a convulsion†.

A nerve may be also morbidly excited, so as to produce what Bichat and others have denominated "an exaltation of function," by vascular congestion and irritation of the nerve itself, perhaps even of contiguous parts from which the nerve derives its arteries, upon the due action of which the ordinary performance of its function depends; as is proved by the negative evidence of exposure to severe cold, which benumbs the faculties, and deprives the sentient extremities of the fingers of their sensibility. This is also strikingly exemplified in the effect, upon some constitutions, of cold bathing, which driving the blood from the surface to the interior, leaves the nails blue like those of a corpse, and the fingers at once bloodless, powerless, and all but insensible. The converse is, perhaps, equally true. If blood, as in blushing or violent anger, be sent in superabundant quantity to a particular part, that part is red, and violently hot, and augmented secretion frequently results: the ordinary attributes of the nerve are increased; but this is rarely more than morally painful—there is no positive physical suffering; but if there be inflammation, the extremities of the nerves may partake of the inflammatory action, and pain will be the consequence. I believe this to constitute the great distinction between simple and phlegmonoid erysipelas. In the former the inflammation is exterior to the nervous expansion upon which the sensibility of the surface depends; there is little pain, therefore, although the morbid increase of arterial action produces violent heat, as is found also in a disease somewhat analogous, scarlatina. But in phlegmonous erysipelas, and in whitlow, the inflammation extending to that cushion-like texture upon which the remote extremities of the nerves of sensation are expanded, pain, frequently very severe, is the result.

It has been frequently observed, and I believe with truth, that irritation of the trunk of a nerve will be followed by the same consequences as excitement of its extremity. Of this, no better illustrations can be offered than the experiments of physiologists upon the pneumogastric nerves. It is well known that any cause of irritation applied to the extremities of these nerves in the larynx, trachea, bronchi, or pulmonary cells, which all derive their nervous energy from the same source, will occasion violent cough; and Cruveilhier found that mechanical irritation of the trunk of the same nerve was productive of a similar effect—the occurrence of violent spasmodic cough.

Now since local determinations of blood to the surface are found to produce an excessive development of nervous energy, as is proved by its influence upon the capillaries in increasing heat, it is probable that congestion of the vessels of the neurilema of a given trunk, especially if accompanied with arterial excitement, may occasion similar results at the ultimate destination of that nerve. After all, however, it may be difficult to define with accuracy the line of demarcation between mere congestion with increased arterial activity upon the one hand, and actual inflammation upon the other, so closely do they approximate to each other; and what we ascribe to mere congestion and increased arterial action, may, in truth, be the result of inflammation in some part of the course of the nerve.

Analogy appears to lead to the belief that in nerves, as in the brain, vascular turgescence and irritation, short, however, of the occurrence of inflammation, though having a strong tendency to terminate in that pathological condition, may produce a morbid excess of nervous energy. Excessive arterial action within the cranium is said to produce such an irritable state of the nerves which minister to the organs of sense, as to render them acutely and painfully sensitive to their ordinary stimuli, this be-

* Haller. Elem. Phys. vol. iv. p. 322.
† "A nervo spongia frigida tacto convulsio."

ing the only evidence of their excited state, for it does not appear that they are subject to neuralgia: hence the intolerance of light and sound so characteristic of cerebral excitement. But since even in the most favourable of these cases, where the patient is cured by active remedies, the existence or non-existence of meningitis, in a greater or less degree, cannot be determined; since we generally find that mere arterial fulness, even to the extent of threatening or producing extravasation of blood, more frequently occasions torpor or local palsies than irritation; and lastly, since these symptoms of excitement of the organs of sense are so frequently the mere precursors of the more prominent and formidable phenomena characteristic of phrenitis, it is far from impossible that even in such cases, and at such early period of the malady, there may be some degree of membranous inflammation; perhaps even cerebritis itself. It has, indeed, been generally believed that mere meningitis, either within the cranium, or of the spinal cord, will occasion morbid excitement of the nerves which issue from the part affected, although the medullary substance may not be implicated in the inflammatory affection. Such a supposition is not altogether improbable, and, if true, then it is easy to comprehend that vascular congestion of the neurilema, which is but an extension of a membrane of the brain, and envelopes medullary filaments which are also alleged to be an emanation from, or a continuation of, the fibres of the brain (although it has been a mooted point among French physiologists whether the brain terminates in nerves, or the nerves terminate in brain), may also produce similar excitement in a nerve. The details of an operation performed upon a diseased nerve by Mr. John Hunter, in the presence of Sir E. Home, who records the case, seem much to countenance this opinion; for upon the division of the nerve, such were the size of the artery within its substance, and the extent of the bleeding, as to require a ligature. There was, however, embedded in the substance of the nerve, a large tumor, which at least justifies a suspicion that there may have been some previous inflammation, upon which, or upon the mere existence of the tumor, the symptoms may have depended. A less equivocal instance is that related by Bichat, in which it would appear that mere venous congestion had occasioned the symptoms of excitement. "Je conserve," says this distinguished anatomist, "le nerf sciatique d'un sujèt qui éprouvoit une douleur très vive dans tout son trajet, et qui présente, à la partie supérieure, une foule de petites dilatations variqueuses des veines qui le pénètrent." We can scarcely doubt the competency of Bichat to discriminate between tortuous arteries and varicose veins, and yet a most respectable living author has, through inadvertence, given at least an imperfect, if not an incorrect account of this case, leaving the impression that it was one rather of arterial fulness than of varix, in these terms:—"That there is an increased flow of blood *to the part* in these painful nervous affections is not only shewn by the redness and arterial action, but has been proved by an interesting dissection made by Bichat, of a case of painful affection of the sciatic nerve, where the vessels of the neurilema were evidently enlarged in size, and increased in number, so as to be quite tortuous." The difference in these two statements is obvious; and Bichat's more minute and accurate account justifies the argument, that since varicose veins can produce severe pain throughout the whole course of a nerve so large and important as the sciatic, arterial congestion without inflammation may produce similar effects.

The weight of testimony, then, is upon the whole in favour of the supposition that the state of the circulation in the vessels of the neurilema modifies the exercise of nervous influence; and it is probable that the functions of nerves may be influenced also by the state of the arterial circulation in surrounding parts. There is scarcely an instance of any important plexus or single nerve proceeding to its destination, without either surrounding, or crossing, or accompanying in its course, some large arterial trunk. This is well illustrated in the axillary, the aortic, the pulmonary, the cardiac, the cœliac, and the uterine plexus. All the intercostal nerves pass over the corresponding arteries, and are elevated by each impulse of the arterial circulation, as was demonstrated to me by Mr. Swan, in the very simple experiment of blowing into the aorta of a minutely dissected trunk, when the intercostal arteries, distended by successive columns of air, in imitation of the natural circulation, raised sensibly by their

elevation the intercostal nerves; and to approach nearer to my own province, the par vagum in its course lies close to the carotid artery, and passes over and in contact with the subclavian upon the one side, and the arch of the aorta upon the other; whilst the two recurrents wind round the same large vessels before they proceed to the parts which they supply. This general law must be for some wise purpose; and it is hardly possible to resist the inference, that the ordinary offices of nerves are materially influenced by the movements of these contiguous arterial trunks; and if so, it is not irrational further to conclude that an excess of action in such vessels may produce an "exaltation of function" in the nerves which they so influence; but after all, probably this influence is but a modification of "mechanical impulse."

The ordinary impulse of arterial action, however, only promotes or assists the ordinary functions of contiguous nerves; its excess does but increase those attributes. The effects are not morbid or anormal, the parts upon which the nerves are distributed being free from pain or muscular spasm, although there may be increase of heat and of secretion; excepting, indeed, in cases where the nerve is diseased; then the results are greatly modified,—any thing that can increase the momentum of blood under such circumstances often producing neuralgic attacks or convulsive movements, just as pressure with the finger, in a case communicated by Sir Charles Bell to Dr. Cooke, or the contraction of a muscle, as in Mr. Denmark's case, upon an inflamed nerve, will occasion similar effects.

But whatever may be said of the influence of vascular excitement of the nerve itself, or of contiguous parts, in producing an excessive development of nervous energy, there can be no doubt of the effects of inflammation of a nerve, whatsoever its producing cause, or in whatsoever part of the course of the nerve it may occur. I believe it to be a cause of much more frequent operation than is generally supposed.

I have already adverted to the difficulty which must occasionally exist in drawing the precise line of demarcation between simple vascular congestion upon the one hand, and actual inflammation upon the other. That the latter state, however, may and does not unfrequently exist, we may safely infer from the nature of the producing cause, the peculiarity of some of the symptoms, and the appearances on dissection; and where we can obtain this combination of evidence, the symptoms always assume the character of excitement, unless or until the nerve has been destroyed by the inflammation, or the latter has subsided or become subdued. Who, for instance, can doubt, when neuralgia or convulsive movement is produced in the finger by a prick from the thorn of a gooseberry-bush,—as in the case related by my friend Mr. Wardrop, or by an angular piece of porcelain embedded in the lip, as in that recorded by Mr. Jeffries, or from pouring an undiluted acid upon the sciatic nerve, or from transfixing with a needle the nerves of the fore-leg of a dog, as in the experiments of M. Bichat,—that these agents must have occasioned neuralgia by producing inflammation of the nerve, or at least of its enveloping and connecting membrane? for it has been questioned by some whether the medullary matter be subject to such diseased action. Without, however, entering minutely upon this question, which I shall have presently to consider, I shall content myself for the present with the assertion of my belief in the affirmative.

Symptoms of Inflammation.

Besides the ordinary and general symptoms of excitement, inflammation of a nerve commonly presents some which are peculiar. Amongst the most prominent of these are pain and tenderness in its course. In the case of neuralgic affection which I have related, the sciatic nerve in the progress of the malady became affected, and wherever it could be reached in its course, it was tender to the touch. In the instances of ischias nervosa, in the well-known dissertation of Cotugno*, as well as in those more recently described by M. Martinet†, there was tenderness in the nerve, in which dissection proved the existence of inflammation. In the interesting example recorded by Mr. Earle, "the course of suffering marked the nerve affected; the pain, with heat and fulness, established the existence of excitement; and *the morbid sensibility, when touched*, of the whole course of the ulnar nerve, *proclaimed the existence of an*

* Sandefort's Thesaurus.
† Rev. Med. 1824.

*inflamed state of that nerve**.*" The patient was cured by excision of a portion of the nerve, when its inflamed condition was manifested in the appearance of the excited portion; for "the neurilema covering the nerve appeared firmer and thicker than natural." It is not stated whether the interior structure of the nerve was examined.

Similar evidence presented itself during life in the case, communicated by Sir Charles Bell to Dr. Cooke, "of partial palsy, with great debility, preceded by inflammation of a nerve, accompanied with excruciating pain." The inflammation was in the ulnar and fibular nerves, and "the pain, which was of the most agonizing kind, had quite subdued a powerful frame. Observing that the pain was confined to certain parts of the hands and feet, and that a distinct class of muscles were become paralytic and shrunk, Mr. Bell's attention was directed to the corresponding nerves, and he found them *tender and acutely sensible* to the slightest touch."† The existence of inflammation was thus detected by the *peculiar symptoms;* anti-inflammatory remedies were employed, and the patient cured without an operation. These characteristic symptoms, however, cannot always be traced, for the inflammation may exist, although at too great a distance from the seat of the symptoms, or too remote from the surface, to be within reach.

Occasionally also, as in some of the instances recorded by Martinet, the nerve may be felt swollen, and hard, as well as exquisitely tender to the touch. In one case the cubital nerve swelled to a considerable size, equal to the little finger, and felt like a tense cord along the arm. It remained swelled, rigid, and painful, for four months. In a second case, also, the cubital nerve could be felt enlarged and tense, especially between the elbow and the arm-pit. In a third, the radial nerve was felt tense, and somewhat enlarged. In these nerves the enlargement may be traced during life, on account of their superficial situation; the sciatic, though enlarged to the size of the fore-finger, could not be traced, on account of its depth, but we may content ourselves in such cases with the excruciating pain produced by pressure.

[To be continued.]

* Med.-Chir. Tr. vol. vii.
† Cooke on Palsy, p. 93.

ON THE MORTALITY OF THE MANUFACTURING DISTRICTS OF ENGLAND.

To the Editor of the Medical Gazette.

SIR,

IN a recent number of the Medical Gazette, you have done no more than justice to M. Villermé, in your praise of his intrepid industry and his sagacity in examining the three volumes of our British Population Abstract; and you have also favoured your readers with some of the valuable results of his investigation.

I perceive that you reserve for another opportunity the observations of M. Villermé, as to the influence of our manufactures on mortality; a discussion strictly belonging to medical statistics, and one in which I cannot but think that M. Villermé has been led to prejudge the question by the declamation which has been lavished on that subject in England; whereby he has been convinced of the extreme misery of the manufacturing population.

If you are not alarmed at a few arithmetical details, I will endeavour to prove to your readers that this supposed misery is confined to the greater mortality of infants; much of which disappears upon considering the inevitable effect of rapidly increasing population. Before I proceed to this examination, I hope you will permit me to soften any preconceived opinion, by alleging the acknowledged fact of immigration into the manufacturing counties.—(See M. Villermé, § 10.) What the amount and effect of such immigration may be, I will endeavour to shew in the sequel of this letter. At present, I only beg your readers to remember that migration indicates the comparative *prosperity*, not the comparative *misery*, of the region towards which it directs its course.

As the basis of my remarks, I must refer to some of the results of the Population Abstract; and I propose to advert especially to *Lancashire*, as compared with the general results of England and Wales. The marriage registry may be deemed unexceptionable, as far as the total of 1,052,095 marriages in ten years, 1821-1830; of which years, throughout this discussion, I must be understood to speak. It is needless to advert to the unregistered

marriages of Jews and Quakers, or of the Scottish border, because it suffices (for the purpose of comparison) to presume that Lancashire shares not unequally in the defect thus produced.

The registry of burials is known to be defective, as were also, in some degree, the estimates of the amount of such defect obtained from the clergy; some of whom, from various causes, pleaded inability to furnish such estimate: but it will be seen by those who investigate the subject, that the number of deaths in the ten years did not differ materially from 2,657,797 (see Pop. Preface, p. 45), and the increase of population having been 1,978,312, the births must have exceeded the deaths by that number; supposing always that immigration from Ireland and Scotland, and emigration to North America and the Colonies, balance each other. Thus the births appear to have been 4,636,000; which number, divided by 1,052,000, gives 441 births to 100 registered marriages; from which result, deducting illegitimates at 5 per cent. and irregular marriages at 1½ per cent., the average number of children will be reduced to 416 from 104 actual marriages in England and Wales.

The ages of 3,938,496 individuals buried in 18 years (1813-1830), are known; and of them 1,044,526 died under two years of age*—that is, 26 per cent. or one-fourth part. The ages of 359,438 individuals buried in Lancashire during the same period, are also known, and of them 121,103 died under two years of age*,—that is, 34 per cent. or one-third part.

The registered burials in England and Wales, averaged at 246,290 from 1820 to 1830; deduct *one-fourth* part for the infants who died under two years of age, and the remaining burials (184,718) are as one in 75 of 13,897,187, the population of England and Wales in the year 1831. In like manner the registered burials in Lancashire, averaged at 26,047; deduct *one-third* part for the infants who died under two years of age, and the remaining burials (17,365) are as one in 77 of 1,336,854, the population of Lancashire in 1831;—and the different proportion of mortality (except of infants, as above) is in favour of Lancashire. The unregistered burials would add one-twentieth to the above number of burials in England and Wales—one twenty-fifth part in Lancashire; an immaterial difference, not worth mention, except to shew that it has not been neglected in this investigation.

Here the discussion might close, were it certain that the births in Lancashire are really as four to three in comparison with those in England and Wales; a question which, I think, may be elucidated by further recourse to the Population Abstract.

For this purpose the proportion of marriages in the year 1830, to the population in 1831, must be considered:—

	Marriages.	Population 1831.	Proportion.
In England and Wales ‡	107,719	13,897,187	1 in 129.
In Lancashire §	12,075	1,336,854	1 in 111.

But the illegitimate children born in Lancashire exceed the proportion born in England and Wales as one-thirteenth to one-nineteenth part‖, a proportion which assigns an excess of 959 illegitimates annually to Lancashire. The births in England and Wales have already been stated at 4,636,000 in the ten years—say 463,600 annually, and in the proportion of 441 to 100 registered marriages; and marriages equivalent to the above 959 illegitimates (in fact, 217 marriages) are to be superadded to the above number of marriages in Lancashire; and the comparison will stand thus¶:—

Lancashire Marriages.	Popul. 1831.	Proport.
12,075+217=12,292	1,336,854	1 in 109

so that the proportion of children born in Lancashire must be 129 to 109—*i. e.* as 100 to 84 or 85, in comparison with the proportion born in England and Wales; and in that proportion the deaths of infants in Lancashire would exceed the similar deaths in England and Wales, were the mortality of infants in both cases equal.

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* Population Abstract, vol. iii. p. 487.
‡ Vol. iii. p. 486.
‖ Vol. iii. p. 490.
* Vol. iii. p. 186.
§ Vol. iii. p. 156. Vol. i. p. 304.
¶ Vol. iii. p. 156.

But the actual deaths of such infants in Lancashire are as 34 to 26 per cent., or 100 to 88 or 89 ; and the excess in Lancashire of 4 per cent. (say 88-84, or 89-85) remains to be accounted for by the crowded habitation of the families of workmen in the vicinity of the factories —an excess which would be incredibly small, were there not many adults in Lancashire who have spent the dangerous years of infancy elsewhere. These are the immigrants from Ireland, and from the agricultural counties; and the annual accretion of these admits of estimate, or approximation, in the following manner:—

The population of Lancashire having nearly doubled itself within thirty years*, the increase may be assumed at 2·6 per cent. per annum. The marriages in Lancashire (with the addition already stated on account of the excess of illegitimates) averaged at 11,464 from 1820 to 1830†. Multiply this number by 4·41, and the births in Lancashire must have been annually 50,556.

At the same time the increase of population was at the rate of 28,400 annually, which number deducted from the births (50,556—28,400=22,156) admits of no more than 22,156 deaths annually. But the actual number of deaths (allowing for unregistered and unnoticed deaths) must have averaged at nearly 28,000 per annum‡; so that the immigration may be taken at 5,844 annually (28,000—22,156=5,844), and must have augmented the proportion of the deaths of adults in Lancashire, but not in such manner as to be susceptible of exact calculation ; because (as M. Villermé says, in his note on § x.) the ages of immigrants cannot be ascertained.

For the sake of approximation, it may be allowable to assume that few or none of these are so young as to be under two years of age; and if the existing immigrants are 170,000 (a conjectural estimate, which cannot be explained in this letter), their deaths at 1 in 77 will be 2000 per annum ; which number being expunged in considering the mortality of natives of Lancashire, the deaths of infants under two years of age amount to 37 per cent. instead of 34 per cent.; and the disadvantage of infant life becomes 7 per cent. instead of 4 per cent., as before stated, without reference to immigration, which cannot be unnoticed in fair discussion.

But the mortality of infants implies not the misery of their parents, being, indeed, but the effect of dense population, and incidental to all large towns, where the incipient functions of infant life encounter the unwholesome atmosphere of a small apartment inhabited by the father, mother, and family. But these infants have not been employed in manufacture; and I am not aware that extraordinary mortality can be *proved* to fall on individuals so employed.

Thus I cannot but suspect that the misery imputed to manufacturing population has no other foundation than that kind of benevolent prejudice which cannot be dispelled unless by arithmetic and tiresome deductions, little suited to the impatience of our contemporaries, who are daily becoming more repugnant to laborious investigation; and I must appeal to the candour and perseverance of M. Villermé, who will experience no difficulty in clearing his mind from prejudice, when he pursues the foregoing details, founded on the results of the Population Abstract, with which he is perfectly familiar.

Your obedient servant,

J. Rickman.

January, 1835.

* In 1801, 672,731 ; in 1831, 1,336,858.

† Vol. iii. p. 156, marriages 11,247+217=11,464.

‡ Vol. iii. p. 156. The registered burials in Lancashire average at 26,047 ; add unregistered 683 ; and 4 or 5 per cent. for further defect (as in p. 45 of Pop. Preface), the total will be about 28,000.

CASE in which LITHOTRITY WAS UNSUCCESSFULLY ATTEMPTED.

To the Editor of the Medical Gazette.

Sir,

Fully impressed with the conviction that, for the right understanding and due appreciation of any new method of treatment, unsuccessful cases, and the causes of failure, should be made as well known as the more flattering cases of success, I send the enclosed account of an unfortunate stone case, in which lithotrity was attempted, and of the cause of failure.

This case may appear the more interesting, taken in conjunction with one an account of which was detailed by Dr. Arrowsmith, in a late number of your journal.

From fear of intruding too far on

your columns, I have not added any remarks, leaving the interesting points and practical deductions to be derived from this case, to the discrimination of your readers.—I am, sir,

Your obedient servant,

GEO. BUSK.

Seamen's Hospital, Dreadnought,
Jan. 13, 1835.

George Patterson, ætat. 24, admitted September 24th, 1834. Complains of pain about the pubes and hypogastrium, and of difficulty in making water, which he is obliged to do very frequently. The pain is considerable when the bladder is full, and is not increased when it becomes emptied; with the last portion of urine there is generally, but not always, a purulent admixture. The flow of urine is occasionally interrupted suddenly, and it is always passed in a very small stream; it becomes tinged with blood after long retention.

He states that he has been affected in this way for about twelve days, but that he has been occasionally subject to the same complaint for the last eighteen months. But a very confused account, however, of either his feelings, or the history of his complaint, can be obtained from him.

On examination, it was found that there was a urethral fistula about the middle of the perineum on the right side of the raphe; the length of time that this had existed could not be learnt. There was also a close stricture at the commencement of the membranous portion of the urethra; the orifice was also much contracted. With the elastic gum bougie that was passed through the stricture, a calculus could be felt, which gave the sensation at first of being lodged in the neck of the bladder or commencement of the urethra, and was consequently judged to be of small size.

A silver catheter was then passed, by which eight ounces of *clear* urine were drawn off, and latterly about two drams of purulent matter. By the catheter the calculus was not felt; neither did the moderate search for it appear to cause much irritation of the bladder.

These points being ascertained, and there being no marked signs of disease elsewhere,—although his general appearance was such as to lead to the supposition of that being the case,—there appeared to be no reasonable objection to the performance of either lithotomy or lithotrity; the only obstacle, especially to the latter, being the presence of the stricture and fistula in the urethra.

Under these circumstances lithotomy was proposed, but to this the man resolutely refused to submit; the nature of the only alternative was then explained to him, and he consented readily to undergo the trial. In the course of about a month or five weeks the stricture and urethra were so far dilated as to admit one of the largest sized elastic bougies, but the fistula did not close. His urine and other symptoms remained the same, and his health appeared slightly to mend.

At this time, Mr. Weiss not having brought the lithotrite to the admirable perfection to which it is now arrived, and being desirous of having the advantage of the latest improvements, I did not immediately proceed to attempt the operation, attention being paid to the improvement of the general health, &c. For the last fortnight before the operation, nothing was done in the way of dilatation, the passage being already quite large enough for the instrument I was to use; and I hoped that by leaving the parts at rest the fistula might have closed, but this, unfortunately, did not happen: the leaving of an elastic catheter in the urethra excited more irritation than could be borne.

On the 13th of November, things being in a favourable state, I attempted the operation with Weiss's screw lithotrite and the usual instruments, but failed in being able either to inject a sufficient quantity of fluid into the bladder, or to make it retain the little that was injected, principally from the very powerful contractile efforts of the bladder, by which the fluid was forcibly ejected, both through the fistula and along the urethra by the side of the catheter, the size of which was probably hardly large enough for the purpose. Another probable obstacle also to the retention of fluid in the bladder appeared on post-mortem examination.

Under these circumstances, although the lithotrite passed readily into the bladder, it would have been of course useless, and even dangerous, to make any attempt to seize the stone. I determined, therefore, to await the closure of the fistula before making another trial.

The man, who endured much pain from the injection of the bladder, appeared to suffer nothing more than he had usually done a few hours after the operation.

For fourteen days his symptoms remained as before. At this time considerably more purulent discharge came away, mixed with his urine, but without any ropy mucus; and the stone frequently afforded great obstruction to the flow of urine, and he consequently required occasionally the aid of a catheter, with which, however, never more than four or five ounces were drawn off; and he had the sensation always remaining as if the bladder were full

to bursting, although manifestly quite emptied.

On the afternoon of the 1st December he was suddenly seized with a severe rigor, from which he imperfectly rallied in the evening, complaining of severe pain beneath the edge of the ribs on the right side, which was increased by pressure and motion; this was temporarily relieved by leeches, fomentations, calomel and opium, &c.; but the rigors recurred in the night, he became collapsed, and died early the following morning.

On examination *post mortem*, there were found in the right side of the chest signs of recent acute pleurisy over a small extent of surface, as deposition of fibrine on the surfaces of the membrane, and effusion of sero-purulent fluid into the cavity.

The urinary organs, *in situ*, were next examined. The right kidney was a little larger than natural, and resembled a bladder full of pus, which had escaped also into the surrounding cellular tissue, especially on the inner side. The right ureter, to within an inch of the bladder, was enormously dilated and distended by fluid. The left kidney was also larger than natural, of a pale colour, and flabby. The ureter on this side was also considerably enlarged; becoming contracted, however, before entering the coats of the bladder. This viscus, containing a little fluid, was large, and through its thickened parietes a calculus could be felt: laid open, its neck appeared wide, but perfectly healthy; there was superficial ulceration on the anterior and posterior walls about the middle, where it had been contracted on a smooth calculus, of a circular flattened form, one inch and a half long, one inch wide, and hardly half an inch thick, composed of concentric layers of lithic acid.

The openings of the ureters were plainly visible, like two small round ulcers. Opening the right ureter, its upper half was found divided into four or five sacculi, by circular contractions or strictures of the mucous coat. Some of these contractions were perfect rings, others included only a portion of the circumference of the tube. The situation of these bands could not be perceived on the external surface, and they were formed by a thickening of, or deposition into, the submucous cellular tissue. At the point where this ureter became contracted before entering the bladder, a small calculus was lodged, of a conical form, exactly fitted to the calibre of the canal, and acting evidently as a valve. The right kidney was dilated to a mere bag, subdivided into nine or ten cells, hardly a vestige of the glandular structure remaining. This bag and the ureter were distended with thin purulent urine, which had become diffused to a circumscribed extent in the surrounding cellular tissue, through a small irregular opening in the capsule of the kidney, situated in that part which rests on the diaphragm; and in several other points the bag appeared on the point of giving way. The emulgent vein and artery were of the natural size.

The left kidney when cut open appeared of a paler colour than usual, and the glandular part thinner, the pelvis being dilated and lined by a very vascular mucous coat. The dilated and thickened ureter on this side did not present any of the circular contractions.

Before laying open the bladder and ureters, water or air injected into the former were found to pass readily into the latter, the valvular structure of their vesical openings appearing to be completely destroyed.

ON THE

CHANGES PRODUCED IN THE COMPOSITION OF THE BLOOD BY REPEATED BLEEDINGS.

By Thomas Andrews, Esq.

The object of the following experiments is to determine with precision the changes which are produced in the composition of the blood by repeated abstractions of large quantities of it from the general circulation. In the human subject, opportunities seldom occur of procuring proper specimens for examination, although the operation of venesection is so frequently performed; as in those cases where it requires to be repeated at short intervals the blood is generally in a morbid state. Instead of waiting for such casual occasions, I directed my attention to those animals in which the composition of the blood is nearly the same as in man, conceiving that similar results would in either case be produced. I selected the blood of calves for the purpose of experiment; and as it is the practice of butchers in this country to bleed these animals several times before they are slaughtered, I availed myself of this circumstance to procure suitable portions of blood. The animal is bled from a large orifice in the jugular vein, till symptoms of syncope appear, and the operation is in general repeated at intervals of twenty-four hours. It is once fed between each operation upon a mixture of meal and

water, but this is often omitted before the last bleeding.

The appearance of the blood becomes greatly altered by the successive abstractions; the crassamentum is at first very large, and a portion of the red globules are unattached to it, but it progressively diminishes in bulk, while its consistency increases, till upon the fourth bleeding it appears a small contracted ball immersed in a large quantity of serum, adhering to the stopper of the vessel in which it is contained, and presenting on its external surface an exact cast of the interior of the vessel.

The following analyses were performed by the same method that I formerly employed in a set of experiments on the blood of cholera patients, which were published in the Philosophical Magazine for September 1832. They are nearly all a mean of two separate analyses, which seldom differed from each other more than 0·5 per cent.

A calf was bled four times; between the first and second bleedings a week elapsed, but the rest took place at intervals of twenty-four hours, and the animal was fed between each operation. The composition of the serum and blood at each bleeding is exhibited in the following tables:

SERUM.

	FIRST.	SECOND.	THIRD.	FOURTH.
Water	92·19	93·96	93·81	94·18
Albumen and Salts.....	7·82	6·04	6·19	5·82
	100·00	100·00	100·00	100·00

BLOOD.

	FIRST.	SECOND.	THIRD.	FOURTH.
Water	81·36	85·49	87·41	89·25
Albumen and Salts.....	6·89	5·50	5·77	5·52
Red Globules and Fibrin	11.75	9·01	6·82	5·23
	100·00	100·00	100·00	100·00

The serum had at the third bleeding a specific gravity of 1·020, and at the fourth, of 1·017. At the third bleeding, the specific gravity of the blood itself was 1·031.

The next calf whose blood was examined was nine weeks old. I did not procure any blood from the first bleeding. The third bleeding was twenty-four hours after the second, and during that period the animal was once fed; twelve hours afterwards it was bled a fourth time, but it received no more food:

SERUM.

	SECOND.	THIRD.	FOURTH.
Water	93·32	94·39	94·59
Albumen and Salts	6·68	5·61	5·41
	100·00	100·00	100·00

BLOOD.

	SECOND.	THIRD.	FOURTH.
Water	82·05	89·14	88·92
Albumen and Salts	5·85	5·29	5·06
Red Globules and Fibrin	12·10	5·57	6·04
	100·00	100·00	100·00

The albumen and salts, it is evident, decrease at each bleeding; the diminution is, however, very variable, and even after the fourth time does not amount to one per cent. and a half. In the globules, the same diminution takes place, but to such a degree that they are at least reduced to less than one-half their original quantity. To this principle a remarkable exception occurs in the composition of the blood taken at the last bleeding of the second calf, where the globules are slightly increased above the preceding analysis; but it will be observed that the animal received no food during the intervening period, from which the blood might obtain a fresh supply of serum, while the tendency of the different excretions of the animal was to drain from the circulating mass its aqueous part, and thus to increase the apparent quantity of the globules. This explanation is confirmed by the following analysis.

A calf, three weeks old, was bled twice before it was killed; twelve hours elapsed between the two bleedings, during which time it obtained no food:—

SERUM.

	FIRST.	SECOND.
Water	92·48	93·35
Albumen and Salts	7·52	6·65
	100·00	100.00

BLOOD.

	FIRST.	SECOND.
Water	82·48	83·47
Albumen and Salts	6·70	5·95
Globules	10·82	10·58
	100·00	100·00

The globules have here, it is true, diminished at the second bleeding, but so slightly, that we may attribute this circumstance to the unassimilated chyle which must have been present in the system. In the former case, the animal had been exhausted by previous depletions, and hence possessed no store from which the blood could derive even a small portion of serum, as in the latter instance*.

* Records of General Science.

PREMATURE DEVELOPMENT OF THE BRAIN.

To the Editor of the Medical Gazette.

Sir,

In August last, Mrs. Wilson, of Ernest-Street, Cumberland Market, brought to me her little boy, just two years old, with an account, that since he was six months old his head had been gradually increasing in size, till it

had become so large as by its weight to prevent the child's continuing long in an upright posture. The head was obviously remarkably large for an infant, but I neglected at that time to measure it. He appeared active and lively, though thinner than children at that age usually are when in health. He had never had any fit or convulsions, but occasionally seemed uneasy, when he relieved himself by laying his head upon a chair. His pupils contracted naturally. He had never squinted, nor was he subject to drowsiness or startings during sleep. His appetite was good, and all the animal functions were properly formed. Under these circumstances, I requested my friend Mr. Mayo to see him, who, although we both considered it a case of hydrocephalus, agreed with me that it was not advisable, in the absence of symptoms, to risk deranging the digestive organs by active medicines. I did not see the child again, but a few days since I received a message from its father, stating that it had died of inflammation in the chest, and that I was at liberty to examine the head. In order to secure the full advantages of this permission, I obtained the assistance of Mr. Mayo, who is necessarily more familiar with the pathology of the brain than myself.

The head, of which I have a cast, measured, from ear to ear, over the vertex, 12 inches; from the superciliary ridges to the occipital, 13 inches; and in circumference, 21 inches. The anterior fontanelle, which was quite flat, measured across its opposite angles $2\frac{1}{4}$ inches by $1\frac{1}{2}$; the posterior fontanelle was completely closed, as was the frontal suture.

There was no absorption of bone at any part; on the contrary, it was becoming thicker, a section of the parietal bone at the centre of ossification measuring ·38 of an inch. The dura mater adhered more firmly than I ever before saw it, even in infants, for it was only by great violence that the bones could be separately detached, after the skull-cap had been sawn around, and the membrane of the fontanelle dissected out. Upon raising the dura mater, a layer of false membrane, a tenth of an inch in thickness, and of the size of a crown piece, was found adherent to it at its upper and anterior part; the false membrane adhered less firmly to the arachnoid. Under the arachnoid some gelatinous effusion had taken place to the same extent. Except at this part, there was no effusion on the surface of the brain. The convolutions were perfectly distinct, and retained their rounded shape. All the ventricles were found empty, and not dilated. The surfaces of the medullary matter exposed by different sections presented very unusual vascularity.

It appeared to us that the enlargement of the cerebellum was less in proportion than that of the cerebrum; while that of the latter was greatest above the level of the lateral ventricles. While, however, the brain as a whole, might, when removed from the body, have been taken for that of an adult, the nerves arising from its base, and the medulla oblongata, were in size those of a child. The whole of the fluid that escaped during the examination, including blood, amounted to only two ounces and a half. The brain was afterwards weighed, and found to be within half an ounce of three pounds avoirdupois.

The above description, it will be obvious, differs essentially from all those which have been recorded under the name of hypertrophy of the brain. In these the brain is said to have exhibited signs of *great compression*, arising from the rapid growth of the medullary matter, giving it a bulk too great for the bony case containing it; the convolutions are therefore *flattened*, their lines of separation rendered indistinct, and the cerebral mass is firm, and remarkably *destitute of blood*. The disease has, I believe, in these cases been confined to the cerebrum. Should it be objected that this instance occurred in a child, where the skull readily yielded, and that the difference in the appearances may thus be accounted for, we have still to explain the thickening of the bones, and the want of prominence in the fontanelle,—circumstances the reverse of which are met with where the skull yields to pressure from within. I have always understood that the symptoms of hypertrophy of the brain indicate not *mere* enlargement, but the existence of such a morbid action as would be quite inconsistent with the state of health the child enjoyed. Epilepsy is, I believe, the common effect. It has been suggested to me that there might, in the

first instance, have been an effusion of fluid; that that fluid might have been absorbed, and the brain have grown so as to fill up the cavity,—a supposition arising, I presume, from a fact I had almost forgotten to mention—viz. that there had been no increase in the size of the head since I first saw it. Now this hypothesis supposes either a high degree of elasticity in brain, or such a new growth of particular parts, as would have completely altered the relative proportions of the whole. Surely, too, some symptoms would have marked the change from diseased to healthy action in so important an organ as this.

The only way in which I can reconcile the appearances after death with the state of the child during life, is by regarding this as an instance simply of *premature development*, analogous to what occasionally takes place in other organs—the genitals, for example; and the growth having ceased of late, I see no reason to doubt that, had he remained free from disease, the rest of the body would gradually have gained ground (if I may so express it) on the head, and the disproportion have been ultimately remedied. It is true that there were no remarkable evidences of previous intellect; but knowing so little as we do of the connexion between mind and organization, I consider this but a feeble objection to the view I have taken, especially as I believe that, in the other instances I have alluded to, it is rarely if ever found that the premature growth of the organ is accompanied by a corresponding development of its functions.

I have been induced to relate this case, not merely by its rarity, nor by any wish to enter upon a physiological discussion, but in the hope that it may be received as an useful caution not hastily to subject a child to a course of mercury, or other powerful medicine, and thereby ruin its health, merely because it has a large head—a practice I have more than once seen carried to a very mischievous extent.—I am, sir,

Your obedient servant,

JOHN SWEATMAN,

Surgeon to Queen Charlotte's Lying-in Hospital.

Berners-Street, Jan. 20, 1835.

MEDICAL GAZETTE.

Saturday, January 24, 1835.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

FACTS AND INFERENCES FROM THE POPULATION RETURNS.

IN a late number we called attention to M. Villermé's paper, in the *Annales d'Hygiène:* we only, however, noticed that part of the learned writer's observations which related to the movement of the population, and the probable duration of life in this country. His remarks on the comparative mortality of the agricultural and manufacturing districts we reserved; and we are glad now we did so, as we have had the opportunity of reconsidering them, under correction of Mr. Rickman's emendatory statements, given in a preceding page.

There can be no doubt but that it was the intention of M. Villermé to be perfectly impartial, and that he draws his inferences in a spirit of fairness not always met with in foreign reviewers of our statistics; yet there unquestionably is in his reasoning (at least on the subject to which we now more particularly advert) a sort of bias, which can in no other way be accounted for than by supposing it to result from preconceived opinion. Exact a science as statistics would seem to be, and fixed and stubborn as the data on which it is founded, it is curious how differently its facts may be viewed by different persons, and how opposite the deductions which may be gathered by opposite parties. Even the simple circumstance of the increase of population, whether it should be considered as a sign of prosperity in a state, or the reverse, is far from being agreed upon by our Malthuses and our Godwins. Jean Jacques Rousseau maintained the po-

pular opinion, that it was the surest sign of the stability and success of a nation, that its people should go on to increase and multiply. More recent philosophers admit the truth of the position, but in a greatly qualified manner. Sir Francis D'Ivernois, of Geneva, even holds that the criterion of the civilization and happiness of a people, consists in the births and deaths being kept in a steady state of *non-increment*: a decrease in the births, indeed, under certain circumstances, not being according to him prejudicial to the healthy subsistence of a community. This looks like paradox; but it is a new view of human society, and, as such, acceptable to many speculators, who, as well as their opponents, profess to found their sentiments on exact and incontrovertible details.

The facts brought forward by M. Villermé, and from which he deduces inferences favourable to the popular notion of the superior mortality of the manufacturing districts, are interesting and cleverly selected. He quotes Mr. Rickman's remarks on the extraordinary difference of the *probable life* in the north and west districts of Yorkshire. "In the north riding of the county of York," says Mr. R. in his Preface to the Abstracts, "one half are not dead until the age of 38; whereas, in the west riding of the same county, one half are dead at 18 years of age: an incredible disparity in adjoining districts, were it not known that the population of the north riding increases slowly, that of the west riding rapidly." The west riding, besides, is densely peopled, and a manufacturing district; the north being agricultural, and of a comparatively thin population. But what is chiefly deserving of attention, and in some degree noticed by M. Villermé himself, is, that the mortality in this densely thronged west riding is owing to the great number of the deaths of *infants*—a cause, as Mr. Rickman says, "so powerful, that in Lancashire, where the population increases even more rapidly, one half of the individuals born have not attained the age of 12 years; one half of the males being dead at 7, and one half of the females between 16 and 17 years of age. Such, indeed, on infant life," continues the same author, "is the effect of the crowded residence in the immediate vicinity of the several factories, that, in Lancashire, 36 per cent. of male infants, and 31 per cent. of female infants, die before they are two years old. A rapid increase of population infers the birth and existence of a large proportion of infants, and therefore a large proportion of short-lived persons; thereby accelerating, *pro ratâ*, the time or age at which one half of the population collectively are dead."

If the reader refers to the letter given at p. 588, he will see how Mr. Rickman expands the passage just quoted, and he will be convinced how necessary some such development of its meaning was, when he is informed that the mortality of Lancashire, mentioned in the above quotation, is adduced, by M. Villermé, as a *proof* of the sufferings of the *manufacturing* people in that county, establishing fully all that had been related to him concerning the deep distress of the said operatives*. After which, he (M. V.) proceeds to remind us that Lancashire is that part of England which abounds most with manufactories — that it contains Liverpool and Manchester—that its population is excessive for its extent, and the working portion of the inhabitants so numerous as to reduce the price of labour to a ruinous degree, in consequence of the great competition that exists among them for employment. "It is not surprising," says M. Villermé, "when we consider these facts, that while the mean life has been found to be 33 years

* La rapide mortalité observée dans le Lancastre . . . . prouve la souffrance des habitans, ou d'une grande partie d'entre eux, beaucoup mieux que tout ce qu'on raconte de leur *profonde misère*.

for all England and Wales, and even 40 in the north riding of Yorkshire, in Lancashire it should be no more than 25 years. I am the more solicitous in calling attention to these facts," he continues, " on account of their importance. In the *actual state* of Great Britain, be it observed, it is in the thickest of her population—it is where her industry is most conspicuous, in the great source of her commerce, and in her most populous towns—that her new-born children have the least chance of life—her infants the least probability of becoming adults: whilst, on the other hand, it is in her most thinly-peopled districts, and where there is little or no manufacture carried on, that life has the longest prospect, and new-born babes in especial have the best chance of surviving." We can very well understand how the contemplation of these facts must be interesting and perhaps consolatory to foreigners; but such persons ought first to assure themselves that they are not indulging in day-dreams. M. Villermé would even seem to avoid bestowing a thought on what might serve to remove his misapprehension. He quotes Mr. Rickman, who distinctly attributes the great decrement of the mean life in Lancashire to the great increase of population in that county, implying, of course, that such increase is eminently destructive of infant life; but the French commentator *merely* quotes the remark, and passes on.

One great fallacy which consciously or unconsciously is adopted by all those who advocate the *humane* side, as they consider it, of the factory question, is to estimate the mortality by decennial periods, wholly forgetting to attach the importance which it deserves to the first biennial period of life in the manufacturing, or rather the densely-peopled, districts. Thus the infant mortality, or that of the great number of infants cut off before their second year, is reckoned by these advocates as belonging to all children who die under ten: framing in this way for themselves an argument which tells strongly enough in showing the destructive influences supposed to operate in the early labour in which the children used not long since to be occupied—many of them previous to their tenth year. But the charitable purpose of such argumentation being answered, it is full time to set the matter on its right footing; and before proceeding to calculate the mortality of the ages employed in factory labour, we should at least deduct that of the infants under two years who are born in the populous manufacturing towns. Mr. Rickman, in a letter to which we have much pleasure in again referring, has proved this to a demonstration. He has very satisfactorily shown that the greater mortality in certain counties (particularly Lancashire), depends more upon the inconveniences to infant life attending a dense population, than upon any supposed deleterious influence of the *manufactures* carried on in those counties. He has also proved that adult life in the districts alluded to is more secure than elsewhere. To the medical inquirer the cause of all this cannot be obscure. On the one hand, the absence of those cares and comforts best suited for infant life—perhaps too the neglect of which those parents are guilty who already have many children—without difficulty solve the problem of premature mortality. On the other hand, the *miseries* of the adult operatives have been greatly exaggerated: they by no means all live in densely-crowded habitations, as it has been asserted; while it must not be forgotten that they enjoy a considerable immunity from exposure to cold, earn an amount of wages amply sufficient for their subsistence,—nay, are better fed and clothed, perhaps, than any similar class of adults in the agricultural counties. But our French statistical friends, having caught up the echo of a benevolent party here,—having also perused,

no doubt with a romantic interest, the able speech of Mr. Sadler; but above all, consoling their national spirit in the contemplation of the high price which England pays for her superiority in manufactures,—have suffered themselves to be led away even in their sober arithmetic to an extent not readily to have been anticipated. What M. Villermé says, finally, on the subject, runs in this fashion: "The premature destruction of that class which constitutes the manufacturing portion of the population, the short tenure of their lives, or rather those of their children (on whom the mortality chiefly falls), warrant us in considering their lot as very wretched indeed; and yet, in spite of this dreadful evidence of their distresses, there are people who hold that the operatives of England are much better off than those of France! But how can such a position be reconciled with all that has been written on the subject, and above all, with Mr. Sadler's speech, delivered in the House of Commons on the 16th of March, 1832*, subsequent to the labours of the committee of inquiry? This speech, or rather the report of the committee, has become famous throughout Europe, and certainly presents a picture of the most disastrous misery as attendant upon the English operative and his children employed in the factories."

We will not offer Mr. Rickman, or the reader, so bad a compliment as to analyse the letter in which the error of M. Villermé regarding the mortality of our densely peopled districts is confuted; let it suffice for us to state, that it is clearly made out in that document—1. That a third part of the infants born in Lancashire die before their second year, while a fourth part is the proportion for all England and Wales; and 2. That deducting these infants, the mortality of those who die above the age of two years in Lancashire is only $\frac{1}{77}$th of the population; while for England and Wales generally it is $\frac{1}{75}$th. Both these important positions we consider as proved, by an accumulation of evidence.

In M. Villermé's paper, however, always excepting what has been just pointed out as ill founded, there is abundance of excellent matter, from which we are desirous of making an extract or two more.

In comparing the mortality at different ages in England, Belgium, and France, M. Villermé, availing himself of the labours of M. Quetelet, together with the materials afforded by our Parliamentary Abstracts, and Duvillard's statement of the French law of mortality, constructs a valuable table of the *probable life* in these respective countries, of which the following is a specimen:—

Ages.	In England.	In Belgium.	In France.
	Years.	Years.	Years.
At Birth	26½	24	20·4
1yr.	39½	41	36·9
2	44	47½	42·7
3	46	48½	44·5
4	46½	49	45·7
5	47	49½	45·5
6	47	49	45·4
7	46½	49	44·8
8	46	48½	44·2
9	45½	47½	43·5
10	45	47	42·7
15	42	44	39·1
20	39	40½	35·7
25	36½	37½	32·5
30	34	34	29·4
35	31	31	26·2
40	27	27	23·1
45	24	23	19·9
50	20½	19½	16·8
55	17	16	13·9
60	14	13	11·1
65	11	10	8·7
70	8	7½	6·6
75	6	5	4·8
80	4½	4	3·5
85	3	3	2·8
90	1½	2½	3·0

* This speech is given at full length in the *Annales d'Hygiène*, as a separate article, or by way of supplement to M. Villermé's paper.

This is a remarkable table; the coincidences, especially in the columns belonging to England and Belgium, are peculiarly striking, and must appear the more so, when we consider that the results have been gathered from such very distinct and independent sources. In the years belonging to infancy and boyhood, however, there are certain discrepancies which cannot escape notice; the probable life, for example, of infants just born, would seem to be above two years longer in England than in Belgium; but after that epoch up to manhood, the respective periods are apparently rather the reverse; that is to say, there might be an even wager laid, that persons at those ages would live one, two, or three years longer in Belgium than in England. From 30 to 40 the chances of life are as nearly as possible the same in both countries; and subsequently to the 45th year they seem to be rather in favour of our countrymen, though, perhaps, the *maximum* does not exceed one year.

M. Quetelet's column has been calculated on 387,168 deaths occurring in Belgium during five years, from 1827 to 1831 inclusive. It is very satisfactory to have such a voucher for the probable accuracy of the British column; we only regret that our registers of births are in so defective a state,—for to this circumstance alone can we attribute the discrepancy which attaches to the earlier years. Of the birth of infants who die previous to baptism in this country, no note is taken; in Belgium, on the contrary, the act of birth is registered with the same precision as it is in France.

Here we conclude, but not without once more expressing the satisfaction we have derived from the perusal of so able an analysis of our voluminous population documents. M. Villermé has given himself a new claim to the gratitude of continental statistical inquirers, by this his most recent performance; and we have no doubt that, availing themselves of his valuable guidance, they will now be able to become better acquainted with our national resources, and more competent to explore the rich mine of information afforded them in the records of the British decennial census.

ANATOMY.

We understand that a report has been made to the Home Office by those members of the Council of the College of Surgeons who undertook to inquire into the causes of the late scarcity in the supply of subjects for anatomical purposes. The report is said to be highly favourable to the Inspector, and to recommend that matters should remain much on the same footing as heretofore; any direct or official interference with the parish authorities being thought likely to do harm. It would appear that the chief difficulties have originated in the actual decrease of deaths during the last three months of 1834, and the mutual jealousies of each other among the teachers.

EXTRAORDINARY OPERATION.

The following appeared in the official journal of the Valetudinarium, on Saturday last; the very day we published the "Advertisement Extraordinary," offering a bonus for rare and striking cases: "Mr. Liston this day removed *a warty excrescence from the lower lip* of a middle-aged man! The lip being held by the left hand, kept on a stretch by an assistant, a bistoury was passed through it," &c. &c Wonderful, really! As this is the first *great* operation which has been "done," of course a clinical lecture on the subject may be expected in the next number of the L. U. Journal.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Tuesday, Jan. 13, 1835.

Horne's New Preparation of Opium.

The first meeting for the present year was held at the house of the President, where

we understand that yet another meeting may take place before adjourning to Berners-Street.

After the usual preliminary business, a paper was read by J. H. Horne, Esq. surgeon, of Gerrard-Street—"On the Preparation of the Acetum Opii Sedativum, and its Uses as a Sedative in the Treatment of Mania, Melancholia, and Puerperal Mania."

The author commenced his paper by an account of the acetum opii sedativum; a preparation of opium which he has been in the habit of using for the last four years, in lieu of laudanum. It is made by distilling a mixture of powdered opium, dilute acetic acid, and spirits of wine, after macerating for seven days, and straining, as long as any alcohol passes over: the resulting liquor is the acetum opii sedativum of the author, and is three times the strength of laudanum*. After explaining the process just glanced at, the author argued that the disfavour into which opium has generally fallen in lunacy, has arisen from prescribers having overlooked the stimulant effect of small doses of that drug, and given it in quantities insufficient to secure the sedative effect that liberal doses generally produce. He then detailed several cases in confirmation of the utility of the acetic laudanum above described.

His first case was that of a lady, whose sensitive and vascular systems he found in a state of great disturbance. Her tongue was coated, her skin parched, and she had other symptoms of high febrile excitement. Her mind was much affected; the predominant feelings and emotions melancholic. He commenced the treatment by a small bleeding, followed by cold lotions to the head, and a dose of his acetic laudanum, equal to 90 drops of the officinal tincture. The blood was slightly buffed. The sedative was repeated at intervals, gradually lengthened from four to six hours, during the first three days of treatment, and digitalis was used to depress the pulse. On the third day, at length quiet sleep was procured. The opiate was repeated thereafter nightly, for two months, and sometimes in the day-time, when indicated by returning irritability, &c., and in doses varying from ten to twenty drops of the acetic solution; and the patient recovered perfectly.

His second agrees in all important points of symptoms, treatment, and result, with the one just described.

The third case was that of a female of 50, afflicted with mania melancholia, as the author seemed to think, from exclusive study of religious books; but more probably from domestic misfortunes, to which he alluded as sources of incovenience to himself in his treatment. In this case, also, similar treatment to that employed in the two former was completely successful.

The author related a fourth case, of a young girl recently delivered of an illegitimate child, and who, from her parents having threatened to throw her upon the world on account of her misconduct, became the victim of puerperal mania. The author found her in a state of high febrile excitement, and in great dejection of spirits. In this case he prescribed the officinal tincture in preference to the acetic, as more stimulant, and therefore more proper for a subject familiar with ardent spirits. He ordered a mixture containing laudanum, in doses equivalent to 20 or 25 drops, every second hour; under which plan, with little other medicine, she was convalescent in a fortnight.

The author concluded his paper with some general observations, inculcating the propriety of small bleedings as preliminaries to the sedative medication; and the importance of early distinguishing the true nature of the excitement, as erethismal and not inflammatory, for which latter he thinks it liable to be mistaken.

Before adjourning, the President announced that at the next meeting, which will take place, we believe, on Tuesday the 27th of this month, a paper will be read by Dr. Bright, of Guy's Hospital.

* See Mr. Horne's account of the mode of preparation in our last No. p. 575.

REMARKABLE CASE OF

SUICIDE BY THE INHALATION OF CARBONIC ACID GAS.

The following case, by M. Gerard de Gray, was read at a late meeting of the Paris *Société de Médecine.*

A young man, 23 years of age, of a fair complexion, tall, and rather robust, having spent in the capital all the finances allowed him by his parents, returned home to recruit his purse, as he hoped, through the indulgence of a fond mother; but failing in his object, he resolved to put an end to himself. He made no secret of his design, and on the 16th of August last carried it into execution. His bed-room was about nine feet square, and little more than six in height. On every aperture in it by which the air might possibly have admittance, he pasted paper; and about five in the afternoon lighted a brasier of coals,

which he set on the floor close by his bed. After this, he left the apartment for a while, carefully closing it after him, and told several persons of his intention to destroy himself. At six he said to an old lady, "My brasier is now ready—I go to die." On the following morning, the family having become alarmed, the door of the chamber was forced open, in presence of the *Maire*. An insupportable vapour issued from the place, and the body of the unfortunate youth was found stretched across the bed.

The official examination of the body took place on the 19th, sixty-six hours probably after death. Nothing had been disturbed since the first visit: the corpse lay as it was originally found, the clothes on, and a handkerchief tied round the head. The face and hands seemed swollen, and violet-coloured; and the mouth was soiled with matter ejected from the stomach. The arms were partially flexed across the trunk. On a closer view of the face, it was observed to be dreadfully tumefied and livid; in some places black, with greenish wheals intermixed. The eye-lids were closed and greatly swollen. Alimentary matter, half digested, was issuing from the mouth and nostrils as the body was turned over a little.

The chest, on being stripped, was found bluish, and the lower garments were observed to be stained with urinary and fæcal discharges. The whole body seemed at this time to be one-fourth, perhaps one-third, larger than its proper dimensions. The limbs were not stiff.

On the floor the brasier still occupied its place already mentioned: it was of considerable capacity, and seemed to have been lighted with paper. Near the body were placed two volumes of an old Encyclopædia; one of them, at the foot of the bed, open at the article *Ecstasy*—the other, near the right hand, displayed the article *Death*. On the latter volume were a pencil and a bit of paper, with the words *Je meurs avec calme et bonheur* clearly written, with the date annexed; but beneath that there appeared, in characters very difficult to be read, the following words: *Au moment de l'agonie j'aurais voulu m'être procuré une sensation agréable.* It would seem that the deceased, immediately on writing this scrawl, had fallen into the position in which he was found. The attitude did not betoken any struggle at the last moment; yet it seems probable, from the signs of sickness of the stomach, and the mention of agony in the last phrase, that life did not become extinct without some painful sensations.

Abdomen.—The division of the integuments was attended with the extrication of abundant putrid gas. The parenchymatous viscera contained in the cavity were gorged with blood; but they were otherwise sound. The intestines filled with gas; no fæcal matter. The mucous membrane in its whole length of a deep rose colour, uniform, except at the small curvature of the stomach, where it was more intense. The mass of alimentary matter in the stomach seemed to consist of cabbage, potatoes, and milk, in a half digested condition. There was no reason to suspect the presence of any poisonous substance among the contents.

Thorax.—The lungs, on being cut into, yielded a great quantity of black blood; the right lung adhering to the pleura-costalis by numerous bands of firm lymph, showing the existence of pleurisy at a former period; the left lung also in some degree adherent, but chiefly posteriorly. The heart collapsed and contracted: its four cavities completely empty. In the pulmonary artery and veins there was a little blood, of a thickish consistence; a larger quantity was found in the hepatic artery and veins. But with regard to the vacuity of the heart, the author thinks it must have resulted from the development of gas, expelling the blood before it.

The head was not examined, the circumstances of the case leaving no doubt of the perpetration of deliberate suicide.

Some deep incisions being made in different parts of the surface of the body, it appeared that the violet-coloured infiltration of the skin and cellular tissue was of the same character every where, whether in the dependent parts or elsewhere. The effect of the pressure of the clothes in different places was to leave pale indentations. There were phlyctenæ or vesicles filled with a dark red serosity in several situations, especially at the base of the chest, where this formation was favoured by the compression of the waistband of the trowsers, which was very tight.

Had this *post-mortem* been made at an early period, it might have served as a model of the effects produced by asphyxia from charcoal fumes—the cause of death being beyond all doubt and question. But after sixty-six hours, putrefaction had already given rise to marked changes; not, however, to such an extent as to conceal organic lesions, had any such existed.

A note, it should be added, was found in the pocket of the deceased, stating the reasons which led to this deliberate act of self-murder.—*Gazette des Hôpitaux.*

ST. GEORGE'S HOSPITAL.

Case of violent Hysteria (?) in a Man, successfully treated.

Henry Ingram, æt. 22, labourer, admitted March 19th, under the care of Dr. Macleod. Is seized every two or three minutes with shaking, which at first resembles the rigors of a fever, but increases gradually, till the whole body becomes violently convulsed. The paroxysm begins sometimes by gentle motion in the lower extremities, which are soon thrown into strong convulsive action; the hands are then clasped together, or the arms crossed, and thrust rapidly and violently up and down. The head is moved forcibly — sometimes from side to side, at others up and down, as in the action of nodding, but with inconceivable rapidity; and not unfrequently is made to perform rapid rotatory motion on the shoulders. The muscles about the throat are at the same time thrown into strong spasmodic action, inarticulate sounds are uttered, and the face becomes first red, and then nearly purple.

At other times the first indication of an approaching fit is a gurgling in the throat, accompanied by what seem to be repeated attempts to swallow, and by spasmodic action of the anterior muscles of the neck. In a few seconds the paroxysm becomes general and perfect. The whole anterior part of the neck is considerably and permanently enlarged, giving the idea of a diffuse bronchocele, and during a paroxysm it undergoes a still further augmentation of size.

The patient retains entire consciousness during the severest paroxysm, and as soon as he can articulate, answers questions in a precise and intelligent manner. His general aspect, however, indicates some degree of imbecility.

The attempt to make any muscular exertion, or the application of the finger to the throat, occasions him to gasp, and even excites a paroxysm, if persisted in.

He states that about fifteen months ago he was seized, after exposure to cold, with pain in the chest, attended with cough, tremor of the limbs, and an incontrollable shaking of the head. After the lapse of about a month, all these symptoms subsided, excepting an occasional paroxysm of shaking of the head. Three weeks ago, after a similar exposure, all his former maladies suddenly returned, the fits of shaking becoming immediately more frequent and violent, and his condition getting daily worse up to the present time.

He states, likewise, that at the onset of the complaint he experienced great giddiness, accompanied by a disposition to step backwards, to counteract a supposed tendency to fall in that direction.

On making him attempt to walk, the muscles of both lower extremities are seen to be affected with a sort of tonic spasm, being drawn into hard knots, so that he is unable to advance the shortest distance without assistance.

His bowels are habitually costive.

Twelve ounces of blood were taken from the back of the neck by cupping, a blister was applied, and the bowels acted upon by purgative medicine. The fits continuing without interruption, at intervals scarcely ever extending to an hour, he was ordered, the next afternoon,

> Acet. Morphiæ, gr. j.; Oxymel, 3j.; Mist. Camph. 3vij. Fiat haustus statim et horâ somni sumendus.

The object of which was stated to be chiefly with a view of ascertaining whether the disease was in any degree simulated; as it was supposed that, if sent to sleep by the morphia, he would not wake at the proper time to have his fits.

22d.—Soon after taking the second dose of morphia he fell asleep, and remained tranquil for about an hour, continuing to sleep for periods of that length during the whole night, but being awoke by fits in the intervals. This morning the paroxysms are as severe and frequent as ever; usually beginning by the patient forcibly springing off the bed, and projecting himself to the head of it. He was ordered a grain of acetate of morphia this afternoon, and to be repeated twice at periods of four hours, unless previously asleep.

22d. — Took three grains of the acetate of morphia in all, yesterday afternoon and evening. More tranquil last night; slept for two or three successive hours, when he was observed to become slightly convulsed, and awoke in a paroxysm. This occurred several times. It was observed this morning that longer intervals are interposed between the attacks. There is now, during the paroxysm, more of gasping and exertion about the throat, with much moaning. Complains of pain, which he compares to cramp, just below the short ribs on either side, and there is, in the paroxysms of to-day, much more of rotatory motion of the whole body.

24th.—A friend having visited him yesterday, his presence greatly excited the patient; the fits became more severe, and sleep was almost entirely prevented during the night by their constant recurrence, notwithstanding the morphia. He willingly attempts any muscular effort which he is desired to make during a paroxysm, with the double effect, first, of arresting the convulsions for a moment,

and, secondly, of aggravating their violence, when, at length, they overcome the resistance of the will.

He was taken out of bed, placed in an empty bath, and a couple of pailsful of cold water were poured over his head and body. This immediately produced a violent paroxysm, which, however, soon subsided; and he was decidedly more tranquil during the afternoon, though with a good deal of tremor.

25th.—The douche was repeated several times. In the intervals he had several fits, but the repetition of the bath was followed by the decided effect of subduing the convulsions, and he remained afterwards for some hours free from an attack, but still with violent trembling. Towards evening the paroxysms again became urgent, and he passed a very restless night. The morphia was omitted; the cold dash and the purgatives continued, and he had

℞ Argent. Nitrat. gr. ss. ter die.

30th.—The violence and frequency of the fits have been materially diminished since the last report. Complains much of flatulency, and of something rising to his throat, impeding respiration, which is like to choke him. Bowels confined. He now had

Compound Galbanum Pill, gr. iv.; Nitrate of Silver, gr. iv. every six hours; Senna and Salts each morning, and the cold dash daily.

April 7th.—The nitrate of silver has been progressively increased to gr. ij. every six hours. The fits are diminishing in violence and frequency.

10th.—But one fit to-day.

15th.—The last three attacks have come on on alternate days.

℞ Liq. Arsenical. ♏x.; Sp. Lavend. ℥ss.; Aquæ, ℥vij. ss. M. t. d. s. Haust. Sennæ, p. r. n.

19th.—A fit yesterday; none on the two preceding days. Complains of pain in the upper part of the chest, at the left side, attended with cough and a free expectoration of mucus, tinged with blood. Pulse 72, soft.

Omit. Liq. Arsenical. Appl. Hirud. xij. parti lateris dolenti. Habeat misturam Cetacci pro tussi.

29th.—Has had a slight fit daily since last report. The pain in the chest, and cough, relieved; expectoration still streaked with blood; can now walk pretty well with the assistance of a stick.

Yesterday he felt as if something had burst in his throat, after which he brought up a quantity of what he calls blood and matter, but threw it away. He now suffered chiefly from weakness and a cough, and a little bloody expectoration; for which appropriate remedies were prescribed.

He left the hospital on the 16th of May, to all appearance perfectly cured.

On the 12th of last November he again applied for relief, his complaint having returned, though not to the same extent as before; yet so violent were the convulsions, that it required two men to hold him, in order to prevent him from injuring himself; and the paroxysms excited the astonishment of those who had not seen him on the former occasion.

He stated, that after having been dismissed from the hospital in May, he returned to his usual occupation of farmer's labourer, and continued perfectly well until about six weeks ago, when he became again attacked with his old symptoms. The only cause that he could assign for the return of his complaint was having eaten to excess two or three days previously; and it was ascertained from his friends that he was in the habit of indulging his appetite very freely whenever he had it in his power to do so; that he was affected, in short, with something like bulimia.

His bowels having been previously opened by medicine, he was ordered to be cupped on the neck to ℥xiv. and to have the cold douche as before.

℞ Pil. Aloes Comp. gr. x. omni nocte.

Under this treatment he rapidly lost his complaint; and on the 10th December left the hospital, once more cured.

Remarks.—The anomalous symptoms which characterized the case, considered collectively, render it difficult to decide under what particular appellation it should be described. I think, however, I do not greatly err in regarding it as a specimen of that rare affection, hysteria in a man. There are three circumstances connected with the case, the consideration of which assists materially in leading to a clear comprehension of it. The first is the giddiness and disposition to step backwards, to prevent a supposed tendency to fall in that direction, experienced at the onset of the complaint; the second is the degree of imbecility in the look and manner of the patient, noticed on his first admission into the hospital, but more particularly marked on his second admission; and the third is the enormous appetite with which he was afflicted, and the habitual constipation of his bowels.

The disposition to retrograde motion is a morbid perception, that leads directly to the supposition of a diseased condition of the brain. The convulsions, of themselves, are characteristic of no particular affection; but the hideous distortion of the face

during the attack, the occasional violent protrusion of the tongue, and the discharge of frothy saliva, would seem to shew the existence of something more than hysteria; while the particular expression of countenance, and the imbecility of mind,—both of which increased with the duration of the disorder, — are physical and mental impressions that attacks of epilepsy are perfectly well known to produce. On the other hand, the circumstance of the patient remaining conscious during the paroxysms, seems incompatible with our ideas of that disease.

The occurrence of hysteria in men, of which there are recorded numerous unequivocal examples, has completely exploded the old notion of the uterus being the only organ the disordered condition of which is adequate to the production of the complaint. Among other causes of hysteria, gastro-intestinal irritation has of recent years been adduced as one. The large quantity of food which Ingram was in the habit of pouring into his stomach, and the habitual delay in the intestines of their contents, would soon induce irritation in the alimentary canal; this would not, in ninety-nine cases out of a hundred, have consisted in hysterical paroxysm, but the individual in question happened to possess some peculiar nervous susceptibility and constitutional disposition*, which required only the exciting cause to develop that disease. The closer affinity of the case to hysteria than epilepsy is farther indicated by the following circumstances:—The sensation of a globus in the throat, the retention of his mental faculties during a paroxysm, the partial command over himself which he could exercise over a fit, and the absence of drowsiness after the fit was over.

The treatment (after unloading the vessels of the head), was adopted with the view of guarding against imposition, the character of the convulsions being so unusual as to excite general curiosity in the hospital. Some who saw them only once, and were unable to explain their nature, got over the difficulty by asserting that they were feigned; but those who saw most of the case came to a different conclusion. The fits, as has been already remarked, came on at least every half hour when he was first admitted, and this continued equally night and day. Persons were employed to watch him constantly; and it was observed that if he dropt to sleep, he was always awoke by a fit in less than half an hour. He was then brought under the influence of morphia in very large doses; but still, though he slept for longer periods, he either was awoke by the supervention of fits, or had slighter ones as he slept.

The remedy from which he unquestionably derived most benefit was the cold dash, which was very effectually applied, and which the poor man, after the first time, was very anxious to have repeated, from the relief it afforded. On the occasion of his first admission, indeed, it was combined with other powerful agents; but the second time nothing was done for him except keeping his bowels open, and the daily use of the cold dash. In detailing a case of this nature, no adequate idea can easily be given of the violence of the convulsions, which constituted the great peculiarities of the case. I may mention, however, that no ordinary instance of epilepsy made even an approach to it.

A Pupil.

* It has since been ascertained that Ingram has a sister subject to "fits."

RESEARCHES ON THE BLOOD.

By L. Gmelin & F. Tiedemann.

Observers have differed with regard to the presence of carbonic acid in the blood.

Vogel found that under the receiver of an air-pump, lime water was acted on by the disengaged carbonic acid.

Scudamore obtained in the same way, by means of barytes water, a precipitate of carbonate of barytes, equivalent to $\frac{1}{3}$ or $\frac{1}{2}$ cubic inch of carbonic acid gas, from six ounces of blood.

Brande procured from one ounce of arterial or venous blood 2 cubic inches of carbonic acid.

On the other hand, Darwin could detect no such acid; and Dr. Davy asserts that it is neither extracted during the spontaneous coagulation of the blood, nor by the air-pump, nor by coagulating the serum by heat, and that serum absorbs carbonic acid in greater quantity than pure water, which would not be the case if it was charged with carbonic acid.

Gmelin and Tiedemann examined with great care the blood of a dog taken from the femoral vein and artery, and placed in different tubes under the receiver of an air-pump. The result was that neither carbonic acid nor any other permanent gas was extricated. To ascertain the accuracy of Davy's statement with respect to the absorbing power of blood being greater than that of water, carbonic acid was allowed to stand over arterial blood for five days, when it was ascertained that 100 measures of blood absorb 120 of carbonic acid. The coagulum appeared

blackish-red, and the liquid portion was extremely clear.

Since blood contains no free carbonic acid, it was necessary to ascertain whether any existed in it in a combined state. Vinegar was added to each of the kinds of blood which had been collected, as in the former experiments, with every precaution to ensure accuracy, and was placed under a receiver. A quantity of carbonic acid escaped from both, more abundantly from the venous than the arterial. The arterial blood mixed with vinegar, as well as the venous blood, left over mercury for three weeks, was converted into a blackish brown mass, without being separated into serum and coagulum. About the same period, without a knowledge of the Heidelberg experiments, Ed. Ch. F. Stromeyer obtained the same results.

How do these facts agree with the present theories of respiration?

Lavoisier conceived that without coming in contact with the respired air, a liquid consisting principally of carbon and hydrogen is absorbed through the pulmonary membranes into the bronchi, and is converted into carbonic acid and water through the oxygen of the inspired air. As this theory does not render it necessary to suppose free carbonic acid in the blood, it is not at variance with the observations of Gmelin and Tiedemann, but the passage of gases into moist animal membrane, and also the immediate contact between air and blood, cannot be well doubted of. Davy inferred from his results that air passes through the moist coats of the pulmonary vessels, and is taken up by the serum, the oxygen partly forming with the carbon of the cruor carbonic acid, and partly combining with the cruor. When he found that after the inspiration of hydrogen some carbonic acid was expired, though much smaller in quantity than after the inspiration of air, he concluded that venous blood contains some free carbonic acid. According to the observations already given, it appears that the arterial and venous blood contain no free acid, but carbonic acid combined with alkali. And if we suppose acetic acid to be formed in respiration, (for we find it in the blood and in most organic liquids which are exposed to the influence of air in combination with alkalies), then must the venous blood contain more alkaline carbonate than the arterial, when by the formation of acetic acid a portion of the alkaline carbonates will be converted into acetates.

By means of a barytes solution in an exhausted receiver, they estimated that 10,000 parts of arterial blood contain 8·3 of combined carbonic acid, and 10,000 parts of venous blood 12·3 of acid in the same state, being in the proportion of 2 to 3.

They sum up their views of respiration in a few propositions:—

1. That in the pulmonary cells inspired air is absorbed into the moist membranous vessels, and is thus brought in contact with the blood.

2. The azote of the air is not sensibly absorbed by blood, but almost the whole of it remains in the cells. On the contrary, as oxygen is taken up by the blood abundantly, it flows out of the cells into the vessels in proportion to its absorption, and the mixture of gas remaining in the lungs must therefore contain more azote and less oxygen than the air.

3. The oxygen taken up by the blood combines partly with carbon and hydrogen, and forms carbonic acid and water, and partly unites with the solid organic compounds contained in the blood. From these proceed acetic or lactic acid, which combines with a portion of carbonate of soda contained in the blood, and drives its carbonic acid into the cells.

4. The acetate of soda loses, in its course through the different secreting organs, its acetic acid, combines again with carbonic acid, after undergoing many decompositions in its passage with the mass of blood through the body, and enters into the lungs on its return as carbonate of soda.

Is urea contained in the blood after the extirpation of the kidneys?

The authors directed their attention to this point, which it is well known has been decided in the affirmative by Prevost and Dumas, (*Ann. de Chim.* xxiii.)

On the 14th January, 1832, the right kidney of a dog was removed, and in fourteen days the wound healed.

The left kidney was cut out on the 11th February, and on the 13th the animal died. The substances taken from its body which were subjected to examination, were—1. The liquid vomited; 2. The blood collected from the great vessels, amounting to 2 ounces; 3. The bile; 4. The contents of the small intestines. All these substances were dried separately on the water-bath, and digested with hot water. The filtered liquid was precipitated by acetate of lead, and the lead removed by carbonate of ammonia. The fluid was evaporated to dryness, and treated with absolute spirits. The residue, after evaporation, was dissolved in a little water, and evaporated with nitric acid in a glass tube. The solution from the blood produced, with a drop of nitric acid, a yellowish, white crystallized precipitate, which was collected on a filter, washed with cold water, and dried. A portion of it heated in a pla-

tinum spoon left a trace of carbon; another part, heated with potash, disengaged no ammonia. A third portion was heated with water and carbonate of barytes. The mixture was digested with absolute spirits, and filtered. This liquid, which was not precipitated by sulphuric acid, gave by spontaneous evaporation, long colourless needles, weighing 2 milligrames. They were soluble in water and spirits; were dissipated by heat, and precipitated by nitric and tartaric acids; they consisted therefore of urea.

From the vomited matter urea was procured, but in such small quantity as with difficulty to be appreciated. A brownish flocky precipitate was obtained from the bile, not completely resembling urea. No precipitate could be detected in the contents of the small intestines, or from the fæces.

Thus the result of the German chemist's researches is, that urea can be formed without the aid of the kidneys. The French chemists, Vauquelin and Segalas, found no urea in the blood of a dog forty-eight hours after the extirpation of the kidneys; a circumstance which is probably to be ascribed to the short period which elapsed between the operation and the experiment.

No urea, or sugar of milk, in healthy blood.

Ten pounds of fresh blood from the cow, evaporated to dryness in the water-bath, were digested with hot water, and again evaporated. The residue was taken up by water, and precipitated by acetate of lead. The filtered liquid was precipitated by carbonate of ammonia, and evaporated to dryness, and the residue digested with absolute spirits. The latter process was repeated, when, by evaporation, a combination of soda, with a fatty acid, remained.

In the solution of the residue, nitric and oxalic acid occasioned no precipitate of urea, but they separated the fat acid (acid of oil?). It should be observed, that by this process they had previously ascertained $\frac{2}{500}$ of urea, and $\frac{1}{100}$ sugar of milk, to be appreciable. It appears, therefore, that cow's blood contains neither urea nor sugar of milk, or at least in extremely minute quantity.—*Poggendorff's Annalen, and Records of General Science.*

NOTE ON KREOSOTE.

By A. Buchner, of Munich.

According to M. Reichenbach, of Blansko, kreosote ought to be prepared from the tarry matter of the beech tree, by dissolving it three times in caustic potass, and setting it free each time by sulphuric acid. M. Buchner has procured it of the same purity from the tar of the pine, and has found that it is not necessary to repeat the operation so often, if the following precautions be adopted:—

1. At the first distillation of the tar, which is carried on in an alembic, the distilled liquor must be carefully removed several times, and the recipients changed. At first eupione comes over, which swims on the water; but as soon as a little of the oil sinks to the bottom, it is formed in a great part of kreosote, and the distillation is to be continued until the residue is of the consistence of black pitch.

2. The oil, which is heavier than water, is to be agitated with a little concentrated sulphuric acid, to separate the ammonia, and favour decolouration.

3. It is then to be mixed with its volume of water, and distilled in small retorts.

4. The distilled liquid which is formed at the bottom of the water, consisting in a great measure of kreosote, is to be dissolved in hot caustic potass of the specific gravity of 1·120, after which it is to be left for some time to settle at a slow heat. If there be any eupione, it will float on the surface of the liquor, and must be carefully removed.

5. After the cooling of the alkaline solution, a slight excess of sulphuric acid is to be added, which will set free the creosote.

6. The kreosote separated from the sulphate of potass is to be distilled anew, in small retorts, taking care, as in the first distillation, to reject several times what comes over. The distillation advances slowly at first, and is attended with violent agitation, in consequence of the presence of water. Thus, the first portion which comes over consists only of water and a small quantity of eupione, which must be rejected. The residuum is a brown mass.

7. If the kreosote thus obtained be distilled two or three times without any addition, it will be found sufficiently pure for medicinal purposes.

Kreosote ought to be colourless, and possessed of great refrangibility of blue and yellow, of the specific gravity 1.037 at 20 C. (68° F.); and its alcoholic solution, when mixed with water of barytes, does not become brown in the air. It boils at 203 C. (397·4 F.), and distils without any alteration. It possesses a very peculiar odour, which is something like a mixture of the odour of smoked meat and castor. In its general properties it resembles essential oils.—*Edinburgh Med. and Surg. Journal.*

TREATMENT OF CANCEROUS AFFECTIONS.

PASTE OF CHLORURET OF ZINC.

M. Cancoin has submitted to the Académie de Médecine a phagedenic paste of his invention. The dangerous accidents arising from the use of the arsenical paste, induced M. Cancoin to seek for some better kind of escharotic. Chloruret of antimony seemed difficult to manage, there being no limits ascertained relative to its action: on large surfaces it produces severe pains, vomiting, and purging. In the year 1824 it occurred to him to try the anhydrous chloruret of zinc,—a substance not without its inconveniences; for it attracts moisture from the atmosphere, and neither is it limited in its action. M. Cancoin, however, has composed a paste which possesses all the properties of the chemical substance, keeps perfectly, is elastic, and not deliquescent. It requires to be made up in exact proportions, otherwise it is dangerous. Its action may be varied at will, from half a line to two lines. Like caoutchouc in its consistency, it is, in its ordinary form, only applicable to plane surfaces; for concave or convex surfaces it must be thickened or thinned in the centre. There are three kinds, varying in strength, and made up in the following proportions. 1. The most active: chloruret of zinc, 1 part; farina, 2 parts. 2. Less active: chloruret, 1 part; farina, 3 parts. 3. The least active: chloruret, 1 part; farina, 4 parts. Very little water is added in the composition. By the addition of one-third chloruret of antimony to two-thirds of the chloruret of zinc, together with the proper proportion of farina, a soft wax is formed, well adapted for uneven surfaces.

This paste has now, it is said, been employed successfully for ten years, in all sorts of cancerous cases where the constitution has not become radically tainted. MM. Sanson and Amussat are appointed by the Academy to report on its true value. —*Gaz. des Hôp.*

In a more recent sitting of the Académie, M. Velpeau has exposed certain quackeries connected with this arsenical paste. The inventor lays great stress on the employment of the *chloruret* of zinc—a very dear article; while M. Velpeau has produced an identical paste with the very cheap *hydrochloruret*. The addition of the chloruret of antimony is said to be perfectly superfluous; and it seems that the paste, at the best, has no action even on the skin, if the epidermis be sound and uninjured.—*Ibid.*

A PORTUGUESE BULLETIN.

The young Queen of Portugal has lately been indisposed, when the following curious bulletin was issued, containing one word for her majesty and two for the doctor:—"Her majesty's health continues to improve gradually. *I have only to assert, that my lips never utter any thing but the truth —the clear plain truth.*

"Francisco Jose D'Almerda."

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO RECEIVED CERTIFICATES JAN. 22, 1835.

Joseph Nickson Haslam, Market Drayton.
Webster Adams, Needham Market.
Thos. Tattersall Roscow, Hastingden, Lancashire.
William Taylor Tyson, Canterbury.
Thomas Thodore Campbell, London.
Walter Monkhouse, Penrith.
Henry Offrell Snowden, Ramsgate.
William Archer, Sudbury, Suffolk.
Francis Carbatt Fairbank, Sheffield.

WEEKLY ACCOUNT OF BURIALS,

From Bills of Mortality, *Jan.* 20, 1835.

Abscess	4	Heart, diseased	4
Age and Debility	37	Hooping-Cough	13
Apoplexy	7	Inflammation	40
Asthma	36	Bowels & Stomach	4
Cancer	3	Brain	1
Childbirth	5	Lungs and Pleura	6
Consumption	71	Insanity	4
Convulsions	30	Liver, diseased	3
Croup	5	Measles	17
Dentition or Teething	5	Mortification	4
Dropsy	20	Paralysis	1
Dropsy on the Brain	16	Small-Pox	14
Dropsy on the Chest	4	Thrush	1
Erysipelas	1	Unknown Causes	1
Fever	8		
Fever, Scarlet	10	Stillborn	12

Decrease of Burials, as compared with the preceding week . . . 19

METEOROLOGICAL JOURNAL.

Kept at Edmonton, *Latitude* 51° 37′ 32″ *N. Longitude* 0° 3′ 51″ W. *of Greenwich.*

Jan. 1835.	Thermometer.		Barometer.	
Thursday . 15	from 40	to 53	29·49	to 29·64
Friday. . 16	42	55	29·65	29·53
Saturday . 17	27	43	29·50	29 56
Sunday . . 18	25	41	20·46	29·29
Monday . . 19	33	43	29·09	29·19
Tuesday . 20	26	36	29·46	29·64
Wednesday 21	19	34	29 89	30·06

Wind variable, W. and N.W. prevailing.

Except the 17th, 20th, and 21st, cloudy; with rain on the mornings of the 16th and 19th. Snow fell on the evening of the 19th, much of which melted as soon as it fell; during the night of the 21st, snow fell—average depth, one inch.

Rain fallen, ·375 of an inch.

Charles Henry Adams.

Wilson & Son, Printers, 57, Skinner-St. London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, JANUARY 31, 1835.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture XVIII.

ON DISEASES OF THE LUNGS.

SECTION III.—DISEASES OF THE PLEURA.

The pleura, you are aware, gentlemen, is a fine serous membrane investing the lungs, and reflected over the diaphragm and the inner surfaces of the ribs. It secretes a fluid, for the purpose of lubricating the parts, and allowing their free play upon each other. Almost all the diseases of this membrane have for their results an alteration in the quantity and quality of this fluid. We shall consider the diseases of the pleura in the following order:—

Pleuritis.
Hydrothorax.
Pneumothorax.
Pneumothorax, with effusion of fluid.
Adventitious deposits.

PLEURITIS.

By *Pleuritis* or *Pleurisy*, we mean an inflammation of the pleura. Laennec has given several minute divisions of this disease, which I think unnecessary, as they all may be included in the three following forms, which I shall successively describe:

Pleurisy, { 1st. Acute. 2d. Chronic or latent. 3d. Gangrenous.

1st. Acute Pleurisy.

We shall proceed in our usual order, by first describing the morbid anatomy of the parts affected.

Morbid Anatomy.—The inflamed pleura presents in the first instance a red colour: after a short time, probably only a few hours, an effusion takes place from its surface, varying exceedingly in its quantity: to this effusion succeeds a deposition of coagulable lymph, which forms pseudo-membranes covering the inflamed parts: these false membranes finally unite, become organized, and converted into cellular membrane, or fibro-cartilage. We shall consider these conditions, as indicating different stages of the disease, in precisely the order described: viz.

1st. Redness.
2d. Effusion of fluid.
3d. Formation of false membrane.
4th. Conversion of false membrane into
Cellular membrane.
Fibro-cartilage.

First Stage.—Redness.—In the first stage of pleurisy, the inflamed membrane is of a [illegible] colour, sometimes appearing uniform and diffused in its tint, at others in spots of various sizes. This last appearance is probably a post-mortem result, for there is every reason to suppose that the redness is uniform in the living subject, and that the absence of colour between these spots or stains arises from the partial transudation of the blood through the vessels after death. Thus we see that in persons dying of erysipelas on the surface of the skin, the blood transudes the vessels of the inflamed parts, and the skin returns almost to its natural colour, leaving a few spots only here and there. Guersent injected stimulant liquids into the serous membranes of living animals, and found that the redness produced by their inflam-

mation was uniform, and not maculated. The red colour penetrates through the membrane.

Besides this diffused colouration, vessels are seen ramifying in an arborescent form, in the same manner as upon the conjunctiva, when that membrane is inflamed. The extent of the redness varies considerably; it may occur only in a small point, it may occupy the whole of the pleura on one side of the chest, but it very seldom affects both sides at the same time.

Some authors have thought that the pleura becomes thickened during this stage, but a careful examination will shew that it is not.

Second Stage.—Effusion.—It is very probable that at the commencement of the red stage, the pleura presents a dry surface, or nearly so, because we have then no signs of effusion; the secretion commences in a few hours.

The effusion consists of a citrine, straw, or yellow-coloured fluid; it is sometimes slightly reddened, from the admixture of a little blood, small clots of which may be occasionally seen floating in the liquid. When this accidental coloration takes place, Laennec has called the disease *Hæmorrhagic Pleurisy.* The fluid is at first limpid, and inodorous, and varies in quantity from an ounce or two to seven or eight pints.

It may readily be conceived that this effusion of fluid must produce certain mechanical effects upon the parts within which it is contained. It is of the highest importance that we should be well acquainted with these effects, as they afford the most valuable signs to direct us in the diagnosis and treatment of this stage of the disease.

The pleura bounds the cavity containing the effused secretion; that membrane invests the lungs and pericardium, covers the upper surface of the diaphragm and the inner surface of the ribs and intercostal muscles. The effect of the accumulated fluid must be to compress these parts, and increase their distance from each other. Let us examine these results.

As the fluid is secreted, although a portion of it gravitates to the lower part of the pleuritic cavity, a considerable quantity spreads over the whole surface of the lung, and compresses it, and in proportion to its accumulation, so the lung becomes diminished in size, until at last it is reduced to so small a volume that it is not larger than the hand: the pressure of the fluid upon the organ is directed from without to within, from before backwards, and from below upwards: the lung is flattened against the vertebral column, and in consequence of its compression becomes denser and less crepitant than usual; it contains but little air, its blood-vessels are flattened and empty, and the bronchi are contracted: the pulmonary tissue is, however, perfectly distinguishable, and if air be forced down the trachea, the viscus may be completely inflated, and restored to its original size.

Old adhesions modify the form and situation of the lung when compressed. If these adhesions have existed between the upper lobe and its corresponding costal pleura, the organ can only be pressed from below upwards, and it then occupies the superior part of the pleuritic cavity, while the fluid is accumulated beneath it. If old adhesions have formed between the lower surface of the organ and the diaphragm, the reverse takes place; the pressure of the fluid is from above downwards; the lung occupies the lower part of the chest; and the fluid is placed above it; finally, when there are adhesions between the outer surface of the lungs and the costal pleura, the pressure is directed from within outwards, the organ is flattened against the ribs, and the fluid collects nearer to the median line of the chest.

If the previous adhesions are so situated as to isolate the effusion in a diminished space, the disease has been called *partial or circumscribed pleurisy.*

The heart becomes also displaced, if the fluid be considerable in quantity: thus, if the effusion be situated on the left side of the chest, that organ is pressed towards the right; and its beatings can no longer be felt or heard in his natural position. If the accumulation be in the right side, the heart is pressed still farther to the left.

The pressure of the fluid upon the diaphragm forces it to descend, but that effect is inconsiderable on the right side, in consequence of the support which the liver affords to this muscle. In extreme cases, the compression may be sufficient to force the edge of the liver below the margins of the cartilages of the false ribs, but I have rarely seen it. If the left side of the diaphragm be compressed, the stomach is pushed before it, and a diffused and irregular swelling becomes very distinct below the cartilages of the false ribs on that side.

We must now consider the effect of the pressure of the fluid upon the intercostal muscles and ribs. The internal surfaces of these muscles are forced outwards, and are brought to a level with the external surfaces of the ribs, so that the intercostal spaces are altogether effaced, and the whole side of the chest is rendered perfectly smooth and even; nay, some have said that these spaces have been seen projecting outwards: I have often sought for, but

have never met with, this appearance. The pressure of the fluid forces the ribs directly outwards, by which the whole of the affected side becomes enlarged, and sometimes to a considerable degree; so much so, that in measuring and comparing the two sides of the chest, I have seen a difference of two inches. This difference of size affords us a most important sign of the disease.

Third Stage.—Formation of False Membranes.—The effused fluid, which in the first instance was transparent and of a straw colour, now changes its characters, although the precise time at which it does so has not been discovered, and probably varies in different individuals. Small particles of white and opaque albumen, like curds of milk, are now seen floating in the secretion; these particles enlarge, unite, and form masses of various sizes up to that of an egg; sometimes they present the appearance of fresh mesenteric fat. The colour of the fluid itself also changes; it becomes milky; the floating albuminous matter breaks down into small fragments, and mixes with it, so as to give the whole the appearance of flower diffused in water; finally the comminution of the albumen becomes still more complete, and the whole effusion then presents a puriform character.

As these changes take place, the albuminous matter gradually precipitates and adheres to the surface of the pleura, forming a false membrane upon it, to an extent of surface proportionate to the extent of the inflammation. This false membrane is at first of the consistence of thick pus, or the curds of milk, then of boiled white of egg, or of the inflammatory crust of the blood; and, finally, it acquires the cohesion of the elastic coat of an artery. Its colour is whitish yellow, and according to its thickness it varies from semi-transparency to opacity. Its thickness, at the period of its primary formation, is inconsiderable, but gradually increases, so that it has been seen to measure two or three lines: its surface is occasionally smooth, although more frequently irregular. It would seem that after the membrane had been formed, fresh albuminous matter had been deposited upon it in irregular and intersecting lines, giving its reticulated appearance; these lines are often so numerous, and cross each other so often, that the points of intersection become so close and elevated as to appear like granulations, and the surface has been mistaken for an ulcer.

The relative proportions of false membrane and of fluid vary exceedingly; in some instances the effusion is considerable, and the false membranes are but thin, and slightly extended; in other cases, the membrane exists alone, and there is scarcely any serous exudation; the last case being considered as a variety, under the name of *dry pleurisy*. It may be established as a general rule, that the greater the power of absorption, the less is the quantity of serum. Thus in individuals of firm fibre, or in children the activity of whose functions is great, there is very often but little serum, compared to the false membrane, while in the aged, and in those of lymphatic temperaments, the latter is often inconsiderable.

It may also be observed here, that, generally in proportion to the limpid and transparent state of the effused fluid, the false membranes are thin, but as the serum becomes turbid, and similar to pus, they gradually grow thicker, and of greater density and firmness.

Conversion of False Membranes into Cellular Tissue, or Fibro-Cartilage.

Cellular Tissue.—The effusion being accomplished, and the false membrane formed, nature endeavours to effect a cure by absorbing the thinner matter. In proportion to the activity of the absorption the fluid gradually diminishes, and the compressed lung expands. The degree, however, to which that organ can dilate, not only depends upon the diminution of the fluid, but also upon the thickness and density of the false membrane which has formed upon it, and by which it is bound down to its anormal situation. If the false membrane be very thin, the lung can freely dilate until it arrives at or very near the costal pleura; in that case, bands of albuminous matter cross through the remaining fluid, nearly at right angles from the false membrane lining the costal pleura to that which covers the pulmonary pleura: these bands are at first of a yellowish white colour, and opaque, sometimes round, sometimes irregularly angular, and fimbriated at their edges; they vary in thickness, not only as compared to each other, but in the different parts of their own extent; thus they may be thickest at their costal or pulmonary extremities, or at their centres: they are in the beginning very soft, so that you may pass the finger between the two pleuræ, and rupture a series of them with the greatest facility. These bands gradually increase in number, encroaching constantly upon the space previously occupied by the effusion.

These bands, and the pseudo-membranes to which they are attached at their extremities, gradually become organized: an irregular streak of blood, arising apparently from the healthy pleura, which is spotted with red at the corresponding point, penetrates the band, and soon assumes a cylindrical form of a certain dia-

meter, and ultimately beeomes a vessel. If the rudimental vessel be examined at this period, it is very red, soft, and formed of blood scarcely coagulated. In cutting into it, a round, white, and fibrinous mould may be extraeted, formed of concreted fibrine, whose centre is perforated to form a small canal: this fibrinous mould, in beeoming thinner, appears to form the parietes of the new vessel.

The false membranes and their bands now become thinner and more transparent, their consistenee is yet softer than cellular tissue, and they appear as if injected with fine injection; finally they become perfectly thin and transparent, and lose their vascularity; their firmness is increased, and they cannot be distinguished by their strueture from the cellular tissue of any other part of the body. They are subject also to the same physiological and pathologieal laws as the cellular and serous membranes; like them they secrete and absorb, and may beeome the seat of inflammation.

Fibro-cartilage. — But when the false membrane is thick and firm, the lung is not only bound down by it, but the function of absorption is very imperfectly carried on through its inorganic texture. The cireumstances necessary to the cure of this disease are then extremely unfavourable.

If the patient die in this state, and you examine his chest, you will find the lung redueed to a very small volume, and covered by a thick, yellow, and opaque false membrane. The cavity of the pleura is filled with a turbid fluid, often as if mixed with flour, often also of a completely puriform appearance, constituting that form of pleuritic effusion called *empyema.* Similar bands to these I have already deseribed pass at right angles from one false membrane to another, the only difference being that they are mueh longer, in consequence of the greater distance now between the pleura pulmonalis and costalis.

It occasionally happens, however, that the absorption of the fluid is effected to a certain degree, and that the false membrane enveloping the compressed lung is not so thick as to prevent its expansion, although it may be sufficiently so as not to allow it to extend to the costal pleura: in that case nature makes an extraordinary and beautiful effort to effeet the contact of the opposed false membranes, by forcing the whole of the diseased side of the chest inwards upon the lung, by which that side becomes contracted. Laennec was the first to discover this singular phenomenon.

Let us now suppose that the thick and apposed false membranes have by this means become in eontact; what is their mode of union?

They adhere, and if a transverse section be then made, it will be seen that they form a single solid membranc composed of three layers, the two external being the original membranes now appearing white and opaque, fibrous or cartilaginous, or of a mixed character, and sometimes even partly osseous, as this preparation evidently shews, [shewing it]. A third and intermediate layer is the means of union; it is semi-transparent, and, as Laennee expresses, perfectly similar to the most transparent parts of the intervertebral eartilages.

The *fibro-cartilaginous* membrane thus formed, varies in thickness from two lines to half an inch, but it gradually diminishes as the time advances from its original formation.

Laennee supposed that this species of membrane eould only be formed from hæmorrhagie pleurisy, or at least that the presencc of blood was neeessary in the effused fluid. This opinion is hypothetieal, and unsupported by faets.

It is, gentlemen, when the fibro-cartilaginous membrane is completely formed, that the eontraction of the chest becomes the greatest. You pereeive in this cast, that the shoulder of the affected side has become depressed; that the inferior angle of the scapula is an inch an a half lower than the opposite; that the intercostal spaees are diminished, and that the last rib approaches closely to the crista of the ileum. The sternum and dorsal vertebræ have deviated from the median line, so that the former bone is inclined over to the right or healthy side, and the spine is curved, the convexity being directed to the same side also: finally, the transverse diameter is so diminished, that the circumférence of the diseased half of the chest is less by two inehes than that of the healthy.

2. *Chronic Pleurisy.*

We now proeeed to the eonsideration of the morbid anatomy of Chronic Pleurisy.

Pleurisy may be said to be chronic when the signs of the red stage have passed, and those of effusion have continued for some time: at least, if the fluid be not rapidly absorbed, the false membranes soon form, and then the progress of the disease is usually tedious and prolonged. It sometimes occurs that all the signs of the red stage are absent from the commeneement, and the disease assumes a chronie form in its origin.

The morbid anatomy of chronic pleurisy is nearly the same as that whieh I have deseribed of the acute, the only anatomical difference being that the effused fluid is never seen in the limpid or transparent state.

Laennec, however, thought that when the disease commenced in the chronic form, that there were some differences in the red coloration, and in the appearance of the effusion and false membranes. He observes that the pleura is more highly reddened, that the effused serum is more abundant and less limpid, and has the odour of garlick or gangrene; that there is a much larger quantity of small albuminous flocculi floating in it, so that they give the fluid the aspect of its mixture with coarse flour. He states also that the false membranes have not the same cohesion; that they are friable, and easily broken by pressure with the fingers, and that they sometimes appear to be formed only of very thick pus; that there is but a slight tendency to the conversion of the pseudo-membrane into cellular tissue, and that it is in this case the dilatation of the chest is greatest, and the compression of the lung most complete.

But, gentlemen, although these varieties in the appearance of the effused fluid and false membranes do exist, yet they are not necessarily depended upon, the disease having commenced in the chronic form, as Laennec supposed. I have had many opportunities of observing pleurisy in all its stages, and I can state with certainty that I have seen the appearances just described frequently consequent to the acute form of the disease also.

It sometimes happens that an abscess forms in the parietes of the chest, in consequence of the internal effusion, and it bursts externally: this constitutes the *empyema of necessity* of the ancient writers. I have seen seven instances of these ruptures, and most of them have occurred at the anterior superior part of the chest.

3. *Gangrenous Pleurisy.*

Morbid Anatomy.—This is a very rare disease, and is usually but slight in extent, although in the specimen I present you, it involves nearly the whole of the pulmonary pleura. This state is almost always consequent to gangrene of the lung, or to chronic pleurisy.

This affection appears in the form of round or irregular stains upon the surface of the lung, which are of a brown or black colour, and horribly fœtid; the parts are soft, and easily broken down by the fingers: sometimes the gangrene scarcely extends deeper than the pleura; at others, the subserous tissue is infiltrated with a greenish or blackish serosity of a gangrenous odour.

The irritation of the gangrenous affection always causes a general inflammation of the pleura: abundant serous effusion then takes place, followed by false membranes, all presenting a dirty green or dark colour, of the same smell I have already described. Gangrenous eschars have been known to form upon the pleura pulmonalis and costalis, which, when they fall, have occasioned a communication between the cavity containing the fluid, and the bronchial tubes, allowing a free expectoration of the secreted matter; or the intercostal spaces may be penetrated, and a copious discharge take place from the orifice—constituting another cause of *empyema of necessity*.

Such, gentlemen, is a general account of the morbid anatomy of the different stages of pleurisy. You have seen that the pleura is at first reddened; that it then throws out a serous fluid, from which an albuminous matter is formed, which becomes converted into cellular tissue, or fibro-cartilage. You have seen, also, variations in the degree of redness of the pleura, in the qualities of the serous secretion, and in the nature of the albuminous and pseudo-membranous deposits.

When the disease commences with pain in the side, and fever, symptoms denoting the red stage, it is denominated *acute pleurisy;* it may already be called *chronic pleurisy*, when the fluid has accumulated, and the albuminous matter has commenced to form; and this state may occur without the previous signs of the *acute*. Finally, a gangrenous state of the pleura occasionally, though fortunately rarely, takes place.

Laennec, in speaking of the products of inflammation of the pleura, states that the secretions are of two kinds: the one fluid, the serum; the other solid, the false membrane. I doubt exceedingly that the false membrane is a secretion; I believe it rather to be a deposit from the serum, from the following reasons:—

It must be admitted that the function of secretion (with a single exception) takes place by means of the orifices of the capillary extremities of the arteries; but these orifices are so small that they are beyond microscopic powers to discover. We infer their existence by reasoning, but cannot prove it by demonstration. Is it not almost impossible to conceive that such minute orifices can permit the passage of a solid material? Is it not more likely that they deposit fluids, charged with the specific nutritive matter which the organs in which their vessels ramify require? Do we not see that the phosphate of lime itself is not arranged in amorphous forms in the bones, but in the crystalline? And are not all our notions of crystallization associated with those of previous solution? If, then, the orifices of the capillary vessels are too small to allow the *materiel* of nutrition to permeate them, except

in solution, so must they also be too small to carry an adventitious solid, to be deposited upon the surface of an inflamed serous membrane, except by the solution of that matter also.

But without adverting to arguments derived from the general theory of nutrition, we may adduce others which apply more specifically to the case in question.

It is evident that the first result of the inflammation of a serous membrane is a limpid and transparent secretion, and that the adventitious membrane is the second; the latter never preeedes the former. It is a principle in philosophy, that when two or more events succeed each other, *always* in the same order, that the first must be the cause of the second, the second of the third, and so on. I believe the solid deposit is effected in the following manner:— The serous effusion is charged with albuminous matter; nature soon commences to absorb the fluid; the thinnest parts of it are the soonest taken up, leaving the thicker matter, or albumen, floating in the remaining mass: this albumen becomes attached to the surrounding inflamed parts, covers them in the form of a thin and soft layer at first, which gradually becomes thicker from successive deposits. Irregular lines of albumen, like those floating in the fluid, are also attached to the false membrane thus formed, and give it a reticular appearance. The lowest part of the pleuritic cavity is covered most thickly, because of the gravitation and entanglement of the albuminous matter, until at last the pseudo-membrane is completely deposited, from separation, and not secretion.

If this be not the mode, why is the false membrane always the thickest at the lower part of the inflamed pleura? Are we to be satisfied with the gratuitous assumption that there the inflammation is always of the greatest intensity?

Why is it, too, that we find the relative quantities of serum and false membrane always proportionate to the activity of the absorbing function? Thus in weak and lymphatic individuals, the serum is great in quantity, and there is scarcely any solid albumen formed; absorption is here inactive, the serum remains, and no separation takes place. In children, in whom all the functions relative to their organization are extremely energetic, it often happens that all the serum is absorbed, and false membranes alone remain. From these circumstances, permit me to say, at least, that if I have not proved my own, I doubt Laennec's explanation.

ON THE

FUNCTIONS OF SOME PARTS OF THE BRAIN,

AND ON

THE RELATIONS BETWEEN THE BRAIN, AND NERVES OF MOTION AND SENSATION.

By Sir Charles Bell, F.R.S.

[From the Philosophical Transactions.]

The difficulties which attend the investigation of the structure and functions of the brain are shewn by the ineffective labours of two thousand years; and the first endeavour of the author is to remove the idea of presumption that attaches to the very title of this paper. Perhaps the enumeration of some of the sources of error which have retarded discovery, may be the best introduction and apology.

The first impediment to success is in the nature of the inquiry, since extraordinary and contradictory results must be expected from experimenting on an organ so fine as that must be which ministers to sensibility and motion, and which is subject to change on every impression conveyed through the senses. This remarkable susceptibility is exemplified in what we often witness; extraordinary results, such as violent convulsions and excruciating pain, from causes which appear quite inadequate. For example: the presence of a minute spicula of bone which has penetrated to the brain, will at one time be attended with no consequence at all; at another it will occasion a deep coma, or loss both of sensibility and motion. Nay, symptoms apparently as formidable will be produced by slight irritation on remote nerves. Seeing these contradictory effects, is it reasonable to expect constant and satisfactory results from experiments in which deep wounds are inflicted on the brain of animals, or portions of it torn away?

Other circumstances evince the slight varieties in the causes which produce the most extraordinary effects. Water in the brain, which has free access to all the cavities of the brain, and which to all appearance both presses equally, and if it irritate must irritate equally, will have the effect of rendering one side of the body paralytic, and of convulsing the other with incessant motion.

Another source of error, especially to the experimenter on the brain, is the disturbance of its circulation; for the brain depends more directly than any other organ on the condition of the circulation within it. We may see this in the provisions for the free and equable supply of the blood within the head, as well as for its unim-

peded exit. Now by raising the skull, a neeessary preliminary to most experiments on the substance of the brain, there is an immediate disturbance of the circulation, which of itself may be attended with insensibility or convulsions.

The most frequent source of error, perhaps, is the obscurity which hangs over the whole subject; for although the brain be divided naturally into distinct masses, not one of these grand divisions has yet been distinguished by its function. There is not even an opinion as to their relative importance. Hence it has followed that the experimenter has not known what to seek, or how to plan his experiment; and hence have been derived the weakest fancies that have ever obscured any science. Another difficulty meets the inquirer at every step, if he be not critically guarded. Whole masses of the brain may be destroyed by disease, or actually removed with impunity; that is to say, without any immediate influence on the mind, or on the power of motion or of sensibility; yet the very slightest general impression on the brain will in the instant deprive the individual both of sense and motion.

It will not be denied that the most unequivocal proof of the little success which has attended the efforts made to improve this part of physiology, is the failure of all attempts to explain the phenomena which attend injury of the brain; it is neither said why, in disease of the brain, sensation and motion should be lost together, nor why one faculty should be sometimes imperfect, and the other entire. There is no satisfactory reason given for the most common occurrence in practice, the loss of motion and sensation on the side of the body opposite to that side of the brain which has received the injury; nor has the condition of the face, as associated with that of the body, been accounted for. When circumstances so remarkable present themselves daily, consequent upon action or disease affecting the brain, without our teachers succeeding in offering a satisfactory reason for them, it is obvious that we are in a state of profound ignorance of the most interesting functions of the animal body, notwithstanding the innumerable experiments which have been made upon the brains of animals.

These are probably the reasons why ingenious men have failed to make us acquainted with the distinct functions of the divisions of the brain, and countenance us in advancing to the inquiry in a manner altogether different. If the real intricacy of the brain, and the disappointments met with, have inclined many to consider it as an inextricable labyrinth, we may well doubt whether the thread which is to lead us through has been properly selected. This term is not altogether metaphorical, since it is our design to follow the course of the natural filaments discernible in the nervous matter of the brain. The investigation into the substance of the brain must be made in a manner different from common dissection; there is a new element to conquer. Every part of the brain is closely united and pent up within the skull, for the protection of its delicate substance. This compactness of structure guards the brain against impulse from within, as well as from external injury; but whether the whole of this structure be essential and of primary importance, or whether some part may not perform the merely accessory office of packing and joining together the more delicate parts, and so securing the finer filaments which run through it, is even up to the present time matter of conjecture. However, it is to the filamentous and striated texture that we attach importance, as leading in the right path, and as marking the relations which exist between the parts of the brain, and the connexions of these with the nerves distributed over the body. The advantage with which we now enter on this inquiry is obvious; for instead of seeking, by injuring the substance of the brain, to discover the effects on remote parts of the nervous system, we commence the inquiry with a knowledge of that system.

It being now universally allowed that nerves have distinct functions, and not a common quality, and that the sensitive and motor roots of the nerves spring from different sources, it must appear a very natural mode of inquiry to follow these nerves into the brain, and to observe the tracts of nervous matter from which they take their origin. It is surely an easy, as well as a natural proceeding, to follow these tracts, and to mark the portions of the brain to which they ultimately tend; finally, to inquire what is the effect of the diseases of these parts, what the accompanying symptoms, and to compare the symptoms with the anatomical details.

On this plan I now propose to demonstrate that sensibility and motion belong to the cerebrum,—that two columns descend from each hemisphere,—that one of these, the anterior, gives origin to the anterior roots of the spinal nerves, and is dedicated to voluntary motion,—and that the other (which from its internal position is less known) gives origin to the posterior roots of the spinal nerves, and to the sensitive root of the fifth nerve, and is the column for sensation.

Further, I propose to shew that the columns of motion which come from different sides of the cerebrum join and decussate in the medulla oblongata,—that the columns of sensation also join and de-

cussate in the medulla oblongata. Finally, that these anterior and posterior columns bear in every circumstance a very close resemblance to one another,—that is to say, the sensorial expansions of both are widely extended in the hemispheres: they pass through similar bodies towards the base of the brain, and both concentrate and decussate in the same manner; thus agreeing in every respect, except in the nervous filaments to which they give origin.

Of the striated Septa in the Medulla Oblongata and Pons Varolii.

We can have no hesitation in giving superior importance to those tracts of striated matter which descend from the brain to the spinal marrow, since they are obviously the lines of communication between the organ of the mind and the frame of the body. But these longitudinal tracts are separated by certain plates of fibrous matter, which go directly transverse, are very regular, very easily demonstrated, and although no doubt important in themselves, are particularly useful to us in our present view, as establishing the natural distinctions, or boundaries, between the columns which, descending from the encephalon, constitute the medulla oblongata and the spinal marrow.

I shall first name parts that are familiar, as being noticed in systematic works, and proceed to others which I conceive have been overlooked. Of the former class are the superficial transverse fibres of the pons, or nodus cerebri, which passing across, terminate in the crura cerebelli. When this part of the pons varolii is raised, and with it the longitudinal striated matter which passes from the crus cerebri, and is prolonged to the corpus pyramidale, a very distinct layer or septum of transverse fibres is seen crossing from the one hemisphere of the cerebellum to the other. This septum is best seen from behind, when the tracts which descend from the cerebrum, and from the corpora quadrigemina, are taken away, for then its appearance much resembles the plates now to be described.

As to those septa which I conceive have hitherto been neglected, the most remarkable is that which forms a plane in the median line, resting with its edge upon the last-named transverse septum, and extending its fibres directly backwards, so as to form a striated leaf, separating the two great longitudinal tracts which pass between the medulla oblongata and the thalami nervorum opticorum.

If we separate the corpus restiforme (meaning by that term the mass which passes between the cerebellum and the medulla oblongata,) from the corpus olivare, we shall find a layer of delicate fibres which constitute a pellicle much resembling the fibrous layer which might be peeled from the bark of the birch tree; and this is a septum.

Another septum of the same kind intervenes between the two anterior corpora pyramidalia. So accurately are the extreme anterior fibres of this septum attached to the corpora pyramidalia, that if we separate these bodies, the fibres will alternately adhere to the right and left column, so as to present an appearance as if there was an actual commissure between them; and authors have mistaken this, describing that, which truly is a septum of separation, as a bond of union. And so on the back part of the medulla oblongata, when we push aside the restiform bodies, or those columns which have sometimes been called the posterior pyramidal bodies, and open the central slit, we have the same appearance of minute commissures, which, however, is only the separation of the fibres of the plate, or septum; and these fibres, instead of running in a direction to be a lateral bond of union, or commissure, run from before backwards, and intervene between the longitudinal columns.

These layers not only distinguish in a natural way the columns which are descending from the cerebrum to form the spinal marrow, but they are necessary as leading us to the true points of union between the longitudinal columns, where their fibres actually decussate, and where these septa are deficient to permit the union.

The Pons Varolii, or nodus cerebri, is undoubtedly an intricate part of the brain; but until this intricacy be explained, we can have no hope of making a correct arrangement of the course of the filaments in the brain, and which pass through this body. We shall therefore take it as a key to the composition of the brain.

The pons has, with seeming correctness, been considered as the commissure of the cerebellum. In this its capacity of joining opposite parts we have to notice its two transverse laminæ of fibres above alluded to, one superficial and the other deep-seated. We observe also an oblique lateral process which passes from the cerebellum to the crus cerebri. These septa intersect and distinguish the grand fasciculi or tracts of nervous matter, which, coming down from the cerebrum, seem to flow under the bridge, and converge in the medulla oblongata *.

* The terms pons and nodus are sufficiently intelligible and harmless, as implying no theory; I retain the old names unless the new ones be countenanced by the just eminence of the authors who have invented them. This is the proper check against the multiplication of terms in

We commence our investigation with parts that are familiar. We trace the corpora pyramidalia of the medulla oblongata upwards from the point of their decussation towards the brain. They enter the pons by two distinct arches. The superficial layer of transverse fibres stretching from the crura cerebelli is over them, and the deeper septum is under them. On raising the superficial layer of the pons, we see the fibres of the corpora pyramidalia passing quite through to the crus cerebri; and now in one view we see a great portion of the grand tract which furnishes the nerves of motion.

Let us divide these tracts by a tranverse incision where the corpora pyramidalia enter the pons, and lift them up. We keep close to the deeper transverse septum, which we shall find as distinct and smooth as a floor, and now directed by this septum we distinguish the portion of fibrous matter which is anterior to it; and if we follow this up into the crus cerebri, we shall come upon the corpus nigrum, and find that the crus is not a simple texture of filaments, but that it is compound, and that we are lifting that anterior division of it which belongs to motion, and which we shall find spreads over the tract of nervous matter which comes up behind the deeper-seated septum.

We may complete our view of this motor tract by making sections of the cerebrum, and pursuing the diverging fibres, first into the corpus striatum, and thence, as they proceed onwards, spreading into the hemisphere of the cerebrum and diverging to the cineritious convolutions.

Thus we have already found that the crus cerebri is not simple, but consists of parts easily and naturally divided. Returning, then, to the pons, as furnishing us with the means of making the natural distinctions of these tracts, we take the deep septum or posterior set of transverse fibres again as our guide, and trace

The posterior Tract.

To obtain a distinct view of the whole extent of the posterior tract, we require to have the parts carefully prepared*. It will be very convenient to have the crura, pons, and medulla oblongata, detached from the great masses of the cerebrum and cerebellum, so that they may lie before us. We should first mark out and trace the columns of the spinal marrow; observing the corpora restiformia as they come down from the cerebellum, we may split them at the posterior fissure, and fold them aside.

We now survey the extent of the fourth ventricle. On each side of the calamus scriptorius are two pyramidal columns*. To trace these upwards we must cut into the iter ad tertiam ventriculam, by dividing the corpora quadrigemina, and then we can trace them up into the thalami nervorum opticorum. By a section we may trace them through that body, and then diverging into the hemispheres of the cerebrum.

Having followed these columns upwards, we next trace them downwards, and find that they join, intermingle, and decussate, and again separate, and proceed down the spinal marrow.

From no part of this column does any nerve of motion take its origin; its relations to the sensitive nerve will be seen on further dissection.

The corpus striatum and the thalamus lie very curiously together: the thalamus forms a nucleus, round which the corpus striatum bends, and when their respective layers of striæ make their exit beyond these bodies to form the great fan or solar-like expansion into the hemisphere of the cerebrum, their rays mingle together. A rude representation of these two tracts of the cerebrum, as we have traced them, may be made with the hands. If I place my wrists together, parallel, and closing one hand, embrace it with the other, I represent the two portions of one crus. The closed fist is the thalamus, and the other is the corpus striatum. If I then extend my fingers, interlacing their points, I represent the final distribution of the portions of the nervous matter which are dedicated to sensation and volition.

But before proceeding further, we must distinguish a certain portion of the great tract of fibrous matter that lies behind the septum of the pons, which does not belong to sensibility, but to a different order of parts. If we dissect round the corpus olivare, we find it easy to separate this body from the column of motion on the fore part, and the column of sensation behind. Following, then, the fibrous portion of matter which ascends from it, we find that it runs close upon the back of the septum

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anatomy. In describing the course of the fibres, the expressions I employ are used in their anatomical sense, as implying the direction in which the hand and eye are following the line, and not in reference to the course in which I may suppose the energy to pass in the performance of their functions.

* It will be in vain for the anatomist to attempt demonstrating these facts in the recent brain; but he will find it easy if he take some old preparation of the brain, which has been for some years in spirits.

* In fact, all the columns which form the medulla oblongata converge downwards and are pyramidal. We have the anterior pyramidal bodies, the posterior pyramidal bodies or corpora restiformia, and those deeper columns whose form might authorize the term, as they are more especially counterparts of the true anterior pyramidal bodies.

of the pons, and that a part of it goes off to the corpora quadrigemina, whilst a part runs directly into the crus cerebri.

On tracing the column which descends from the corpus olivare, we find that it is very soon attached to the columns both of motion and of sensation, and becomes incorporated with them as it passes downwards.

We have now traced three great tracts or courses of fibres into the crus cerebri; an anterior one for motion, a posterior one for sensation, and a middle one, which for the present we may call the tract of the corpus olivare.

After these dissections, it is impossible for us to consider the medulla oblongata as the mere commencement of the spinal marrow: it has a peculiar structure and distinct functions; it is the body formed by the convergence of the great tracts of the cerebrum, where these tracts respectively meet and decussate; in it the tract of the corpus olivare is joined to those of motion and sensation.

Below the medulla oblongata the spinal marrow commences, or rather is prolonged from it, but it is constituted with a distinct arrangement of its columns. On each side it receives three columns from the cerebrum, besides those which come down from the cerebellum, under the name of corpora restiformia, to form its posterior part, and these columns enter into relations which do not exist above.

Decussation of the Posterior or Sensitive Part.

We have noticed a fact of more than ordinary importance, as reconciling the occurrence of symptoms with our knowledge of anatomy. Where the posterior tract, descending from the cerebrum, has reached the point of the medulla oblongata, just opposite to the decussation of the corpora pyramidalia on the fore part, we described a coalescence. We have already stated, that when we proceed to separate the columns on the sides of the slit called calamus scriptorius, we see small, neat, and regular filaments, as it were, interlacing and joining the two columns. But when we examine further, we perceive that these filaments belong to a plate of fibrous texture which passes in the central plane from before backwards. This striated septum stops or is interrupted by the union of the columns of sensation; and now attending to the fibres of these two columns, we find them to decussate with an interweaving as distinct as that of the corpora pyramidalia or anterior columns. After this union and decussation has taken place, we may trace the nervous matter downwards in the two lateral portions of the spinal marrow, covered by the columns, which are the most posterior of all, and which descend from the cerebellum under the name of corpora restiformia.

Before tracing the origin of the sensitive roots of the spinal nerves, and that of the fifth nerve, in their relation to these tracts, we may review their course. We cannot fail to observe the remarkable correspondence in the structure and course of the two grand tracts or divisions of the crus cerebri, which descending, form so large a portion of the spinal marrow. Tracing them from the brain, we find both converging from the periphery of the hemisphere; both entering masses of cineritious matter, emerging alike, and approaching, but not absolutely joining; both contracting into narrow pyramidal columns; both having corresponding decussations, and only distinguishable at last by one of them giving origin to the motor nerves, and the other to the sensitive.

The origin of the posterior roots of the Spinal Nerves, and their relation to the decussation of the Posterior Column.

The brain being before us so as to present its posterior aspect, and the back part of the spinal marrow, we raise the cerebellum and tear the pia mater, so as to expose the fourth ventricle. We may divide the processes of the cerebellum and take that body away. Having the parts thus prepared, we attend more particularly to the posterior series of roots of nerves which run towards the uppermost spinal nerve.

If we trace the line where the posterior roots of the spinal nerves arise, we find that the posterior columns of the spinal marrow are behind these roots; and if we trace these posterior columns upwards, we see them diverging under the name of corpora restiformia to the cerebellum. We strike a level by following the posterior roots of the spinal nerves into the spinal marrow. In doing this we shall find it necessary to lift the posterior column, and then, being able to trace the roots of the nerves, we shall find them connected with a course of longitudinal filaments; and these, on further investigation, will be found to be continued from the point immediately below the decussation of the posterior column of sensation, which I have described above.

Thus it will be found that the posterior roots of the first, and consequently of all the spinal nerves, are derived from that posterior column which descended from the posterior division of the crus cerebri, and that they are thus placed in the same relation as the anterior roots with respect to the decussation of the prolonged medullary matter of the cerebrum.

The origin of the sensitive root of the Fifth Nerve, and its relation to the Spinal Marrow.

In former papers I have proved the fifth

nerve of the head, according to the arrangement of Willis, to be the nerve of sensation to the head and face, thus distinguishing it from the nine nerves of the encephalon, and from the appropriate nerves of the senses to the nose, and eye, and ear.

I gave my reasons, at the same time, for distinguishing it as the nerve of mastication, and showed, in short, that it had all the characteristics of a spinal nerve. It becomes now a subject of interest to observe in what respect it further resembles the spinal nerves, and to inquire how its relations with the brain are formed. It is a happiness in this inquiry, that although it be difficult to trace the motor roots of nerves, owing to the delicacy of their connexions with the brain, the sensitive root is followed with ease into the brain or spinal marrow.

We commence the dissection of the fifth nerve by distinguishing its grand divisions as they emerge from the side of the pons, separated by a transverse band of fibres.

Leaving, for the present, the scattered roots of the motor portion which pass between the transverse cords of the pons, we shall proceed to follow the other in a retrograde direction towards its origin. For this purpose, with a small and fine knife, we cut into the substance which surrounds the sensitive root, to the depth of a twelfth of an inch, and then lay aside the knife and take the curette, and perhaps the ivory handle of the knife *. With these we push aside the substance of the brain, in doing which there is no difficulty in distinguishing the smooth, flat, and ribbon-like white nerve. Continuing to press aside the matter of the pons, and, when separated, to cut it away, we find the nerve taking a course backwards and downwards into the medulla oblongata, making a considerable angle. Here we are interrupted by the crossing of the portio mollis of the seventh nerve. We observe in passing, that the portio mollis has two roots; that besides that usually described passing round the processus ad cerebellum to the anterior part of the fourth ventricle, it has a round root, which enters anteriorly to that process. But by attention and much neat dissection we may preserve these roots of the seventh nerve, and, recovering the tract of the fifth nerve below, trace it downwards. We are again interrupted by the origins of the eighth pair of nerves; and here, too, it will be found, on careful dissection, that this nerve does not correspond with the description in systematic works. But to proceed with our proper subject. Some part of the root of the fifth may be seen to deviate in a direction towards the calamus scriptorius; but the main tract descends behind the fasciculus of the corpus olivare, by the side of the great fasciculus of fibres which we have already traced down from the cerebrum. Disregarding this association, and following still the root of the fifth nerve, we find it continued to the roots of the superior spinal nerves; and in tracing it thus far, we must conclude that its relations are with the spinal marrow rather than directly with the brain, and that it joins the posterior column below the decussation of that sensitive tract or column. It remains a proper subject of inquiry to determine how far the deviation of a part of the sensitive tract of this nerve corresponds with its complex function in being the source of taste as well as of common sensibility.

It has been observed by diligent anatomists from time to time, that the nerves of the encephalon come off in a direction ascending from the spinal marrow. There can be no doubt that the sensitive root of the fifth ascends, and that it has its origin in the spinal marrow rather than the brain. Without at present inquiring into the minute anatomy of the other nerves, we may draw very important conclusions from what is before us.

It is rather surprising, that from what was known of the anatomy of the brain, pathologists should have so agreed in their explanation of the phenomenon of injury of one side of the brain producing its effects on the opposite side of the body. Their opinion was founded on the decussation of the anterior columns, or pyramidal bodies, and those only; but great misconception must have prevailed as to the anatomy, when such an explanation could be satisfactory; and, at all events, it must have been believed that the posterior roots of the spinal nerves were the same, in function, with the anterior roots. When, however, it is understood that the anterior column of the medulla oblongata gives off only filaments of motion, the rationale of decussating fibres fails, or rather is imperfect; for in injury of the brain, both motion and sensation are lost on the opposite side of the body. We perceive how important it was, in order to understand this symptom, that the posterior or sensitive part of this column should be shown to descend from the cerebrum, and decussate at a point corresponding to that at which the decussation of the pyramidal bodies takes place.

I have observed, that the corpus striatum is the part in which most frequently rupture of the cerebral vessels occurs; and the

* If we order dissecting instruments, there is no end to the trouble in procuring them fine enough. The operating-case of the oculist, however, furnishes at once all that is necessary for delicate anatomy.

observations of authors correspond with this opinion. In such cases we can readily belive that the power of motion will be most injured; whilst such derangement in the hemisphere must, at the same time, more or less affect the sensibility.

Certain circumstances essential to the study of the pathology of the brain are explained through this part of anatomy; first, that motion and sensation should, in by far the greater number of cases, be lost together, in disease of the brain; because the sensorial extremities of both columns are in the hemisphere of the cerebrum; secondly, it is seen why it is that the sensibility, as well as the power of motion, is injured on the opposite side of the body when the hemisphere of the cerebrum is hurt or diseased, for both columns decussate; in the third place, the anatomy of the origin or root of the fifth nerve explains very satisfactorily why, in palsy, the privation of sensibility of the side of the face corresponds with that of the body.

My paper should perhaps have terminated here, with these demonstrable facts, but I am tempted to reach a little further.

Further examination of the relation between the Brain and Spinal Marrow.

Other questions will be suggested in reference to the symptoms of disease in the brain. When the side of the body is paralytic, how far are the nerves affected which appear to have their origin above the decussations? Does the ninth or lingual, or the portio dura of the seventh nerve, correspond with the spinal nerves? Do the third nerve and the muscles of the eye partake of the condition of the body?

As there is no decussation above the apparent origin of these nerves, and as the commissures of the brain do not serve to explain this phenomenon, we are directed in our inquiries to the spinal marrow.

The spinal marrow has much resemblance to the brain, in the composition of its cineritious and medullary matter, and in the union of its parts. In short, its structure declares it to be more than a nerve, that is, to possess properties independently of the brain. Another consideration presses upon us. Where are the many relations existing between the different parts of the frame, and necessary to their combined actions, established? There must be a relation between the four quarters of an animal. If the muscles of the arm or of the lower extremities are combined through the plexus of nerves in the axilla, and in the loins, what combines the muscles of the trunk, and more especially what joins the extremities together in sympathy? That these combined motions and relations are not established in the brain, the phenomena exhibited on stimulating the nervous system of the decapitated animal sufficiently evince. They must therefore depend on an arrangement of fibres somewhere in the spinal marrow. Comparative anatomy countenances this idea, since the motions of the lower animals are concatenated independently of a brain, and independently of the anterior ganglion, which in some respects gives direction to the volition of these animals.

It comes next to be inquired what use there can be in a decussation, by which one side of the brain is made to serve the opposite side of the body. Ingenuity can offer no reason for such an arrangement; the object must surely be an interchange of fibres, and consequently a correspondence in the movements of the sides of the body and of the extremities. And on this subject it must be admitted, that although in nine out of ten cases the side of the body opposite to that which is diseased in the brain is affected with paralysis, it is not always so, and very often a certain debility is perceptible in the side which is least affected. Again, when a man is seized with paralysis, he is sometimes at the instant affected with pain in the other side. These irregularities tend to countenance the belief that the decussations of the sensitive and motor spinal columns are rather intended to effect combination and sympathy between every part of the frame, than that one half of the brain should belong to the opposite half of the body, for no apparent object, and without producing any harmony of action.

Such arguments induce me to believe that the brain does not operate directly on the frame of the body, but through the intervention of a system of nerves whose proper roots are in the spinal marrow, and that the decussation, or rather the arrangement of the fibres, takes place at the point where the columns descending from the brain join the spinal marrow, and consequently in effect above the origin of all the nerves, excepting those of the four senses. This supposition would furnish an explanation of the whole of one side of the body, limbs, face, and head, being similarly affected in paralysis. It would also explain the appearance, which all the nerves of motion and sensibility have, of coming in a direction upwards from the spinal marrow, rather than directly outwards from the brain, as the nerves of the proper organs of sense do.

In reflecting on the origins of the nerves of the encephalon, it appears that neither nerves of sense nor of motion arise from the cerebellum or its processes. It further appears that the restiform bodies or processes form no union or decussation similar

to those which we have described in the columns of motion and sensation which descend from the cerebrum.

Those descending processes of the cerebellum, however, form a large portion of the spinal marrow; and we must thence infer that the cerebellum operates through the system of the spinal marrow.

The symptoms attributed to disease of the cerebellum do not remove the obscurity which invests this part of anatomy. We know that sometimes the whole hemisphere of the cerebellum is destroyed by suppuration, without loss either of sense or of motion. Moreover, when symptoms do attend disease of the cerebellum, its juxtaposition to the medulla oblongata inclines us to suspect that the effects are produced through the latter body. The substance of the cerebellum is not of diameter sufficient to have a large clot of blood in it, or a large abscess, without blood or matter communicating with either the fourth ventricle, or bursting out upon the surface. The influence thus becomes general on the nervous system, and a confusion in the symptoms is the necessary result. We have no distinct and well-marked cases of disease in the substance of the cerebellum, such as we possess of disease of the cerebrum; and on the whole it does not appear to stand in direct relation to the motions of the frame, or to the common sensibility.

OBSERVATIONS

ON THE

PATHOLOGY OF NERVES.

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[Continued from page 588.]

Structural Changes consequent on Inflammation.

Dissections of nerves after operations, or after death, often verify the suspicions which the symptoms before these events had led the practitioner to entertain; and the appearances are said to vary according as the inflammation is confined to the neurilema, or extends to the medullary substance itself.

Amongst the results of inflammation of the neurilema may be mentioned the deposit of lymph, producing thickening and increased hardness of the nerve. This deposit of lymph amongst the fibres of a nerve has been particularly noticed by Mr. Swan, as the consequence of its being included in a ligature, and as occurring in the chronic inflammation of the extremities of nerves in stumps, in which, "after a perpendicular section of the nerve and tumor, the nervous fibrils may be traced down to the tumor, and coagulable lymph seen to have been deposited between them." This enlargement and hardness from inflammation were very strongly marked in the nerves of three cases of ulcerated limb, described by Mr. Swan; and equally so in some of the cases of inflamed nerve related by M. Martinet. In one the cubital nerve swelled to a considerable size, equal to the little finger; in a second, the cubital nerve could be felt enlarged and tense, especially between the elbow and the armpit; in another, the sciatic nerves on both sides were enlarged to the size of the fore-finger, being also hard and resisting; in another, the right sciatic nerve was increased to double its natural size, through an extent of an inch and a half; and in all these cases not only was the pain excessively severe, but the nerves were exquisitely tender throughout their course.

These deposits of lymph, occasioning thickening and hardness, may take place either upon the surface, or in the interior of the nervous cord, or more commonly in both. In some instances, where it has been confined to the surface, it seems to have strangled the nerve by pressure, and impaired its function; and hence, probably, the explanation of those comparatively rare instances in which a nerve, apparently thickened by inflammation, has become enfeebled rather than excited; agreeably to an observation of Galen, that "a nerve, if rendered thicker and harder than usual, will prevent the transmission of nervous influence, just as the sun's rays are intercepted in their passage through air by mists, smoke, and clouds, and through water by mud and clay *."

When, however, these inflammatory deposits of lymph take place in the interstices of still existing medullary filaments, the symptoms are generally, if not universally, those of excitement;

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* Quippe in aere nebula, et fumus, et nubes, in aqua lutum et limus, solis splendorem, quo minus per ea syncerus procedat impedimento sunt ac vetant. Ad eundem igitur modum et nervus, si crassiore habitu et duriore quàm pro sua natura sit reditus, virtutis transitum prohibebit.—De Symp. Causis, lib. i. cap. 5.

but it may be questionable whether in such cases the medullary matter itself may not have partaken of the inflammation.

As in other textures of the body, so in nerves, permanent redness, observable even after death, is often the result of inflammation. In one instance related by Martinet, the left median nerve was of *a deep red colour, internally as well as externally;* in another, the sciatic nerves were penetrated by a multitude of small vessels, which gave *a red appearance to the nerves;* in another, the sciatic nerve, which was the seat of pain, *was of a red colour from the hip to the ham;* in another, the sciatic nerve was *of a violet colour*, and ecchymosed; in another, the sciatic nerve appeared of a *brown colour*, for the space of two inches, both externally and internally.

In neuritis, other inflammatory deposits besides lymph have been occasionally observed. In some of the dissections of inflamed nerve, the record of which, by M. Martinet, contains ample internal evidence of his accuracy and fidelity, serous infiltration was particulary noticed. In the case already alluded to, in which the sciatic nerve was as large as the fore-finger, each filament of these nerves was distinctly visible, and separated from each other by a sero-sanguineous infiltration. In one instance, blood itself had been effused between the fibrils, and could be squeezed out by pressure; and in two instances pus had been deposited between the filaments. Suppurative inflammation, indeed, is not so common as the other changes enumerated, but its existence is conclusively established by these two cases, in the very valuable memoir by M. Martinet, "Sur l'Inflammation des Nerfs*," corroborated as they are by a fatal instance, related by Sir Everard Home, of suppuration after an operation for the removal of a tumor from one of the nerves of the axillary plexus†. That such effusions are the consequences of inflammation, is almost self-evident. The effusion of lymph, in whatever organ or texture of the body it occurs, is universally considered as conclusive as to the existence of inflammation; the colour of the effused serum excludes the idea of its being mere dropsy, and establishes its dependence upon increased arterial action; and the secretion of pus or sanies by the vessels of the neurilema needs no observation to prove its inflammatory origin.

Some have questioned whether this inflammation can extend to the medullary filaments themselves; but the presumptive and positive evidence upon the subject, in my estimation, far outweighs the difficulties and doubts which some may have felt or entertained upon the subject. The presumptive proofs are derived from a consideration of the structure of these filaments, of the functions to which they contribute, and the analogy of diseases of the brain and spinal marrow. It will be readily conceded, that all parts upon which blood is distributed are susceptible of inflammation; and if it can be proved, therefore, that the medulla of nerves is vascular, we may predicate the occasional occurrence of inflammation of that texture. The statements of different writers upon this very difficult point of minute anatomy are not very precise or clear. Bichat, indeed, describes the vessels of nerves as pursuing a serpentine course upon the neurilematous investiture of the separate filaments; then penetrating the membrane, and continuing their course, together with the filaments, to the medullary substance; a disposition which, as he represents, is more obvious in the spinal marrow. In this part of the nervous system, after ramifying extensively upon the pia mater, which has a near relation to the neurilema, the vessels dip into the medullary substance, and there are lost, as they are continued with the exhalants*. Meckel says, the blood-vessels are large and numerous in proportion to the nerves which they supply; they generally enter nearly at a right angle with the trunk of the nerve, then divide into ascending and descending branches, which are tortuous in their course, subdivide into numerous ramifications, penetrate the tissue of the nerve, and anastomose freely not only with each other, but with the contiguous branches; the frequency of these anastomoses and the great number of blood-vessels having for their object to prevent the slightest interruption to the circulation. This, he adds, is a disposition which prevails in every part of the ner-

* Revue Medicale, 1824.

† Tr. of a Soc. for the Improvement of Med. and Chir. Knowledge, vol. ii. p. 157.

* Anat. Gen. vol. i. p. 154.

vous system, and is strikingly exemplified in the cerebral circulation *.

It thus appears to be established that the medullary substance of nerves receives blood from the vessels of the neurilema; but if further proof be required, it may suffice to refer to the change of colour in the nervous matter itself consequent upon inflammation, and ascertained, as in the experiment of Reil, by dissolving in acids the neurilema, and thus insulating and exposing to view the medullary filaments; and still more conclusively to one of the cases, recorded by M. Martinet, in which the filaments were penetrated by a multitude of small vessels, which gave the red appearance to the nerves.

It is a general pathological principle, admitting of few exceptions, that when the function of a given part, organ, or tissue, is long and continuously impaired, the diseased condition, be it either functional or structural, is in the part, organ, or tissue, affected. Now the observations and experiments of Haller and Bichat satisfactorily demonstrate that the sentient principle is exclusively confined to the medullary filaments, and does not extend to the neurilematous covering, which is but the matrix upon which the vessels ramify before they supply the medullary filaments: thus performing an office similar to that, to which, within the cranium, the pia mater—of which the neurilema is but a continuation—is subservient, and acting as a sort of cushion for the protection of those filaments. "La membrane de chaque filet est veritablement une espèce d'abri qui protège sa substance médullaire, dans laquelle siége éminemment la sensibilité †." "Sed nervi sentiunt et soli quidem sentiunt. Est autem nervorum medulla sola quæ sentit ‡." The French anatomist states this more in detail. Having asserted with truth, that sensibility exists principally in the medullary substance of each nervous filament, and that the neurilema has little sensibility, he adds that this is the reason why simple contact, without compression, with a nerve, is little painful—why a nerve may, almost with impunity, be bathed in purulent matter, in an ichorous fluid, or even the sanies of cancer; why the contact of air is little perceived when the nerve is simply exposed, without separating its enveloping membrane; and why, in a variety of cases, different tumors, situated immediately contiguous to nerves, produce no influence upon the latter, the membrane in each of these cases protecting the medullary substance, which is eminently the seat of sensibility. As to the cellular tissue, which enters into the composition of a nerve, it is nearly devoid of the property of sensibility. Hence it is that, according to experiments in the living animal, frequently repeated by Bichat, the fibres of a nerve may be insulated, and separated from each other with a very fine scalpel, provided they are simply exposed, and not deprived of their neurilema, the animal being little sensible of it. In these experiments, Bichat further adds, it is easy to convince oneself of the degree of sensibility belonging to the envelope of each nervous filament. "Il faut la traverser, et arriver à la substance médullaire, pour produire de la douleur*." Since, therefore, the medullary substance, to the exclusion of its enveloping membrane, is the seat of sensibility, the exaltation of this function in cases of inflamed nerve, manifest in the excruciating pain which attends it, affords strong presumptive evidence that such medullary matter is the seat of the disease.

The analogy of the diseases of the brain and spinal marrow is also greatly in favour of the supposition that the medulla of nerves may be inflamed. Scarcely any one now hesitates to admit that the medullary substance of those important subdivisions of the nervous system is liable to inflammation; but if a doubt upon the subject could still lurk in the mind of the most incredulous, the pathological researches of Dr. Abercrombie, and the work of M. Ollivier upon the diseases of the spinal marrow, should, if he remain accessible to reason, altogether dispel that doubt. These important organs have a direct connection with the nerves by continuity of substance, by similarity of structure and identity of office, and we might safely infer that both would be subject to the same diseases; and this is conclusively established by inflammation producing the same organic changes in all.

In proving the existence, and tracing

* Manuel d'Anatomie, vol. i. p. 249.
† Anat. Gen. tom. i. p. 162.
‡ Elem. Phys. vol. iv. p. 312.

* Anat. Gen. vol. i. p. 163.

the consequences of inflammation of nerves, I have alluded to one very common change—that of the effusion of lymph, attended with thickening and induration. I believe this to be the result principally of inflammation of the membranous investiture of the filaments, though, from what is often observed in the brain, it is far from improbable that the medullary substance itself may partake of the change. In encysted abscess of the brain, there can be little doubt that, as in other parts of the body, the cyst, which insulates it, is the result of the deposit of lymph, which becomes organized, and in some instances constitutes "a firm white membrane*," although in general it is not so well defined. The induration, also, occasionally observed in epileptic patients, and in maniacal cases†, is probably from a similar deposit, which becomes organized. At all events, Andral, whose opinion upon the subject is much corroborated by the researches of M. Bouillaud‡, considers both the general and partial indurations of the cerebral substance as the results of inflammation—the former of its acute, the latter of its chronic form. Morgagni has recorded no less than fifteen instances of induration occurring principally in maniacal or epileptic subjects; in one there were violent headaches only; and one was a case of sudden death in the course of fever. The majority of these were attended with increased vascularity, some with alteration of colour, and some with serous effusion,—appearances abundantly characteristic of previous inflammation §. Luntaud also quotes, amongst numerous instances, one from Fournier, in which a portion of brain, as large as a fist, was of a stony hardness ||. In two instances also (all he has recorded) of chronic inflammation of the brain, noticed by Dr. Abercrombie, a portion of the brain was firmer than natural. M. Andral describes three degrees of this induration: in the first, it is like that of a portion of brain which has been long steeped in diluted nitric acid; in the second, the indurated portion of brain is like wax, or Gruyère cheese; in the third, it has the consistence and elasticity of a fibro-cartilaginous substance. In diseases of the brain these various degrees may be traced, as the accompanying increase of vascularity or irritation, amounting, according to Andral, Bouillaud, and others, to "encéphalite," and may destroy the patient in its various stages. In nerves, also, such induration occurs; but the disease is seldom examined until its long continuance has tempted the patient to submit to an operation, or death has closed the scene; and then the swelling of the nerve has commonly assumed a circumscribed form, and is of a fibro-cartilaginous hardness; blunting, as Meckel has observed of the inflamed nerves of stumps, the knife which cuts it, and producing a sound in cutting like that of cartilage.

The change of colour, also, in an inflamed brain, is very similar to that noticed by M. Martinet, Reil, and others, in inflammation of nerves. The "*dark red colour*" mentioned by Dr. Abercrombie in two cases of "inflammation of the cerebral substance, fatal in the inflammatory stage," with "the bright red colour" in the portion of brain near to the surface, which seemed firmer than natural; the "*deeper red colour*" of "a similar portion deeper in the substance of the brain," and "*the red colour approaching to purple*" of the corpus striatum, in his only instance of "the affection in a chronic form," are very similar to the "*couleur d'un rouge foncé*," the "*rouge violacé*," the "*couleur violacée*" of M. Martinet*, the "*couleur rouge ou violacée*" of M. Gendrin†.

The most characteristic change, however, consequent upon inflammation of the medullary substance of the brain and spinal marrow, is "ramollissement," of which endless examples might be accumulated. The same change of texture is not very unfrequently seen in nerves, and, as in the brain, is probably nearly allied to gangrene. When a question can arise as to the vascularity of a part, at all events the vessels must be few and minute. There is no doubt as to the vessels being numerous in the neurilema, but they must be very small in the white medullary filaments; and this slight vascularity renders these little able to bear active inflammation.

* Abercrombie's Pathological Researches on the Diseases of the Brain, &c. p. 101.

† Meckel, Manuel, &c. vol. i. p. 288.

‡ Archives de Médecine, tom. viii.

§ Epist. Anat. i. v. viii. ix. x. xxiv. lxi. lxii.

|| Ita indurata ut lapidis duritiem mentiretur. Hist. Anat. Med. lib. iii. obs. 84.

* Mem. sur l'inflammation des nerfs, Rev. Med. 1824.

† Hist. Anat. des inflammations tom. ii.

Like the cornea of the eye, and tendons of the extremities, which are peculiarly prone to slough when inflamed, nerves, when their medulla is implicated, are also apt to become gangrenous; and hence the ramollissement of nerves consequent on inflammation. In the interesting example related by M. Serres, of epilepsy depending upon chronic disease of the brain, which was very extensively disorganized, the patient having also a local palsy from disease of the ganglionic or sentient portion, to the exclusion of the motor branch of the fifth pair, "the nerve was found soft, yellowish, and almost like jelly; the same change of texture extending a line or two into the substance of the annular protuberance*." In another instance, related by M. Gallereux, after a continuation of blindness of one eye for six months, the optic nerve, through half its extent, had lost entirely its consistence, being reduced to the state of a fluid of a whitish colour†. This change was probably the cause of the blindness, for the appearance was altogether different from that of the atrophy of a nerve, which is consequent upon the loss of the organ which it supplies. There is in these cases of "atrophie" no softening of texture, but the nerve is often diminished to a fourth or fifth of its natural size; the medullary substance disappears; there is only a gray semi-transparent matter in its interior; sometimes the neurilema is even thicker and more consistent than natural; the nerve looks like a fibrous and almost cartilaginous cord, and sometimes nothing remains but mere cellular substance‡.

Suppurative inflammation of nerves, to which I have already adverted as the result of inflammation of the neurilema, bears a very striking resemblance in its character to the undefined suppuration from inflammation of the brain, described with such accuracy by Dr. Abercrombie, who represents the part of the brain affected in one case, as "reduced to a mass of fœtid pus;" and in a second, says that "the whole of the posterior part of the left hemisphere of the brain was one mass of undefined suppuration." This resembles strongly Martinet's seventh case, in which three inches of the sciatic nerve were infiltrated with purulent matter, which penetrated amongst its most minute filaments; as well as another instance, communicated by M. Goupil, in which the left sciatic nerve was bathed, as it were, in sanious pus, which was also found amongst its fibrils*.

One other consequence of inflammation may be noticed, as common both to the nervous centre, and to individual nerves—ulceration. Two interesting examples of this morbid condition within the cranium are referred to by Dr. Abercrombie: in the one, under the anterior lobe of the right hemisphere, "there was a superficial ulcer, measuring thirteen lines by seven†;" in the other, "there appeared upon the upper surface of the cerebellum an ulcerated superficial excavation, the size of a shilling, containing an ichorous matter‡." In nerves, also, ulceration has been occasionally traced. It has been distinctly recognized by Mr. Swan; but the examples of this state recorded by him are more prominently instances of thickening from inflammation, than actual ulceration; or, at all events, the phenomena are those of the former rather than of the latter state. In one, indeed, of the three cases related by Mr. Swan, there was distinct evidence of ulceration in the dorsal branch of the peroneal nerve; "an inch of this appeared rather smaller, and in a state of ulceration, and in one place nearly divided§." The extent of ulceration, however, in this example, confined as it was within such narrow limits, affords no satisfactory explanation of symptoms, which presented themselves in other parts of the limb, and far above the seat of the ulceration. The pain of which this patient complained, and for which, on account of its violence and extent, he readily submitted to amputation, was in the course of other nerves "in the thigh and leg as far as the ankle." Dissection, however, of the limb after its removal cleared up all obscurity, for there was scarcely a nerve of the limb which had not been considerably enlarged by inflammation. In neither of the other instances recorded as having occurred within the observation of Mr. Swan, was

* Archives de Médecine, vol. v. Quoted also by Descot, Bell, and Andral.
† Journal de Sedillot, tom. l. Quoted also by Descot.
‡ Andral, Précis d'Anat. Pathol. vol. ii. p. 871.

* Rev. Med. 1824.
† Scouttatten, Arch. de Med. 1825.
‡ Howship, in Med. and Phys. Journ. March 1810.
§ On the Diseases of Nerves, p. 69.

there, as he candidly admits, any ulceration of nerves, although they have been introduced into his chapter on that subject; but in these, as in that of William Sharpe, it was evident upon dissection that the nerves had become inflamed, and that this had given rise to the symptoms. In one case only was there ulceration; in all the appearances of previous inflammation were manifest; the phenomena common to all were those which are notoriously the result of inflammation, from whatever cause arising; and to this morbid condition, therefore, common to them all, the symptoms should have undoubtedly been referred. The case quoted from Morgagni is an unequivocal instance of ulceration; for upon examining the limb, a few fibres of the nerve only remained, by which parts above and below the ulcerated portion preserved their communication. As I shall have occasion to advert to this case hereafter for another purpose, I shall then consider more at large the symptoms and their cause. I may content myself for the present with stating, that the explanation offered by Mr. Swan differs materially from that of Morgagni himself, and does not seem to me to be altogether satisfactory, and with pointing at the resemblance between the state of the brain, in which, in the case of my able colleague, Mr. Howship, "there appeared an ulcerated superficial excavation, containing an ichorous matter," with that of ulceration of nerves, "some of which were unusually soft and easily torn," one of which "was in a state of ulceration and nearly divided," and another "so much eroded that a few fibres hardly remained."

The concurrent testimony of all the principal writers upon the diseases of nerves, including Descot, Martinet, Jolly, perhaps Abercrombie, and Swan, prove that the changes which I have described are the ordinary consequences of inflammation; and they appear conclusive as to the occurrence, not only in the neurilema, but even in the medullary filaments themselves, of that pathological condition, the existence and treatment of which were not altogether unknown to Galen, who says upon this subject, "quin et nervo inflammato non pauci spasmo correpti sunt et mente alienati, quorum quidam sic affecti, cum sapientiorem medicum nacti essent, nervo inciso, spasmo et mentis alienatione liberati sunt; sed postea musculum, in quem nervus insertus erat, insensibilem, atque inutilem ad motum, habuerunt*."

This inflammation of nerves, it is said, may be either acute or chronic; but the distinction between the two has not been drawn with precision or accuracy. Both are represented by Mr. Swan as generally taking place "in nerves contiguous to inflamed parts;" and they may therefore partake of the character of the inflammation by which the nerve affected is surrounded. But the symptoms are very similar in both; and as both require similar treatment, the discrimination, which is not always easy, is perhaps, after all, of no great moment.

[To be continued.]

ON THE

DECUSSATION OF THE POSTERIOR COLUMNS OF THE CRUS CEREBRI.

To the Editor of the Medical Gazette.

SIR,

I HAVE no objection to your reprinting my last paper from the Philosophical Transactions; and I shall take the opportunity thus afforded me of making a few observations. I regret that I should have expressed myself so indistinctly on the subject of the decussation of the posterior columns of the crus cerebri, as to lead any one inconsiderately to deny it. I say, I take blame to myself; for if I had described it in another manner, it could not have been misunderstood. For example: –

Make a transverse section of the crus cerebri, half an inch anterior to the pons. Looking on the cut surface of the lower portion, a discoloured line, of a semi-circular figure, will be seen: anterior to this line is the motor column; posterior to it, the sensitive. Put the ivory handle of the knife into this discoloured part; it will prove softer than the part anterior and posterior to it. Thrust back the posterior column until it is seen descending behind the posterior transverse septum of the pons (the anterior column passing before.) You have now a very large portion of nervous matter, which you trace towards the medulla oblongata, and between the processes of the cerebellum. Now observe the two convexities, which are distinct columns, and which pass under the valvula cerebri, and the corpora quadrigemina, and

* De Motu Musculorum, lib. i. cap. 1.

by their approximation form the central slit of the calamus scriptorius. These columns are nearly as large, and as distinct, as the pen I hold.

It is not every person who has the delicacy of hand to display the septum which is between the columns; but even with a coarse hand, let him put in the probe between the columns, he finds it easy to separate them down to the delicate ligaments which form the point of the calamus. This point is firm; it is covered with a triangular-shaped layer, of a gray colour. Here he will find that there is a very firm union, not only of the two sides, but of this superficial layer, to the parts beneath.

This is so plain a matter, that a blind man may find it. I mean not this tauntingly; but if the dissector were blindfolded, or looking another way, on putting the probe, or curette (for that is the instrument I use), either between the columns above or below, and moving it towards the decussation, he would feel the resistance; so firm is the texture where the decussation takes place.

So far there can be no mistake. Let the dissector push aside the processes called posterior pyramids, and the inferior pedunculi of the cerebellum; and thus opening the spinal marrow, prosecute the cerebral columns, which he had previously traced from the crus cerebri.

Dissecting up the coloured matter (which is itself a firm bond), he finds just under this that the columns coalesce, and form a sort of neck. The narrowness here is owing to the closer union of the fasciculi where they decussate. After this union they separate, and proceed down the spinal marrow; and it is easy to trace their filaments into the posterior roots of the spinal nerves.

When this view is made, the course and decussation of these columns is much more distinct than that of the anterior, or motor column, and the union and separation of a different form, and more easily demonstrated, than the decussation of the anterior columns.—These columns are larger than the anterior pyramids; they cannot be the product of a part of the anterior, or true pyramidal bodies; they are seen descending continuously in their whole length, from the back of the pons to the spinal nerves; and a most interesting portion of the medulla oblongata is interposed at this part between the columns of motion and sensation.

There is another very satisfactory mode of displaying the course of the posterior cerebral columns, which is, by opening the sheath in which they run, and taking away the longitudinal fibres altogether, leaving the septum between them. At the point where, in my paper, I have described the septum as terminating, its texture rather opens, and forms oblique passages, through which divisions of the columns pass from side to side.

In the sheath, as seen on lifting the mass of the posterior column, a passage is left for a process to join this posterior column, and if this be followed through, it will be traced from the superior and central portion of the anterior pyramidal body. The connexions between the anterior, posterior, and intermediate columns of nervous matter, as I have observed in my paper, are subjects of great interest. It is this part of the anatomy which will form the subject of my next paper to the Royal Society.

Let me apologise to your readers for entering into no controversy here, but referring them to the original papers.

I am, sir,
Your very obedient servant,
CHARLES BELL.

Brook-Street, Jan. 21, 1835.

[A beautiful drawing, from which the following engraving has been made, accompanied Sir Charles's letter.]

a a, Posterior columns.
b, Decussation.
c c, Posterior roots of spinal nerves.

CALCULI IN THE LACHRYMAL DUCTS.

To the Editor of the Medical Gazette.

Sir,

If you think the following case, which I met with in the country a few weeks back, of sufficient interest, from its rarity, to merit a place in your valuable journal, you will oblige me by its insertion.—I am, sir,

Your obedient servant,

R. H. Meade,

Student at St. Bartholomew's Hospital.

January 23, 1835.

Ann Clarke, aged 19, servant in a gentleman's family in Buckinghamshire, had been in a bad state ef health for some months, and frequently complained of a severe pain in the head, particularly across the forehead, and over the left eye, for which she had been bled in the arm, and had leeches applied to the temples, but without obtaining any permanent relief.

On the 22d of December last, inflammation came on suddenly in the left eye, attended with a good deal of pain: this increased on the following day, and towards the afternoon she felt a most severe lancinating pain in the upper and outer part of the orbit, accompanied with a sudden and profuse discharge of tears; immediately after which she perceived something in her eye, which, on removing, she found to be a small hard body, resembling a fragment of mortar. At first she supposed it to be some extraneous substance which had accidentally got into the organ; but in the course of an hour, the pain, which had remitted on the removal of this mass, returned, and another exactly similar came away. During the three or four following days, as many as twenty-three altogether were discharged, with the same symptoms; after which the pain and inflammation gradually abated.—No other application but that of hot water was made to the eye.

I did not see the patient during the time that these bodies were escaping; but she said that there was no bleeding, or purulent discharge. On the day following the removal of the last of them, there were slight appearances of conjunctival inflammation; but on everting the upper eye-lid, no ulceration or other lesion of the mucous membrane could be perceived there, or on other parts of the eye. She complained of slight tenderness on pressure in the situation of the lachrymal gland. I could not learn from the previous history of the patient that she had ever suffered from calculous deposits in other parts of the body.

On examining some of these substances which had been preserved, I found them to be small, rough, and very hard bodies, of a dirty white colour; the largest about a line in diameter. On viewing them in the field of the microscope, they looked like rough pieces of chalk, with small portions of silex imbedded in them.

By analysis they were found to consist principally of phosphate of lime, with a small quantity of carbonate of lime, and traces of animal matter.

On hearing the particulars of the case, and seeing the substances passed from the eye, it immediately struck me that they must be lachrymal calculi; but the consideration was, where they could have been formed, and how have found their way into the eye. From the circumstances accompanying their discharge, it seems most probable that they were lodged in the minute ducts, which convey the tears from the lachrymal gland to the under and outer surface of the upper eye-lid. It seems to be hardly possible that canals so minute as in the normal state not to be visible without a microscope, should admit of sufficient distention to contain bodies some of them a twelfth of an inch in diameter; but we know that mucous passages in other parts of the body will dilate sufficiently to contain substances proportionally large with the above to the lachrymal ducts, as is frequently seen in the passage of biliary concretions along the gall-duct, and of calculi from the kidney along the ureter to the bladder; therefore, reasoning from analogy, I think that in the case which I have described, the calculi formed in the ducts leading from the lachrymal gland, and at last produced, from their size, so much irritation, as to be discharged with a gush of tears.

On referring to various works on ophthalmic surgery, the only case which I can find at all similar is related in Gräfe and Walther's German Journal (vol. i. p. 163. Berlin, 1820.) But the concretions are there described by Professor Walther as forming in the folds

of the conjunctiva, attended with great irritation and inflammation of the eye, lasting for a long time, and being of a soft crumbling consistence.

In the same journal a case is mentioned by Dr. Krimer, where the nasal duct was obstructed by a calculus supposed to have been deposited by the tears; but they never before appear to have been met with in the lachrymal ducts.

POPULATION AND MORTALITY.

To the Editor of the Medical Gazette.

Sir,

My attention having lately been drawn to the articles in your periodical regarding the laws of population and mortality, and to the discussions there arising from the several statements of Messrs. Rickman, Villermé, and Sir Francis d'Ivernois, I am induced to trouble you with a copy of my work on those subjects, and entitled, "*On the Natural and Mathematical Laws concerning Population, Vitality, and Mortality.*" If you have leisure and inclination to peruse it, you may possibly there find the solution, upon definite principles, of many questions respecting which the opinions have long remained unsettled. That work not having been printed with a view to selling, and therefore no publisher's name being affixed to it, it is probably not extensively known; and I am not aware of any public notice having been taken of it, by persons any way competent to discuss either its merits or demerits.

Having, for express purposes, confined my views of those subjects to certain generalities, which I have been at no small trouble to investigate, I do not feel disposed to enter here into any debate of the particular points on which the above-named gentlemen have dwelt at more or less length. Their labours and research, which they probably will carry further on, entitle them to my utmost respect, independently of that which arises from my being honoured with the personal acquaintance of several among them. I shall patiently await, therefore, the further development of their conclusions, before I venture to plunge into any such partial details. In the meantime, allow me to call your attention to a few leading remarks, sufficiently enlarged upon in my little volume: they are perfectly independent of all conjecture, and rest not on those vague and versatile grounds which are too often admitted as capable of leading to correct results.

1st. The Law of mortality, whether it refer to an indiscriminate population or to any select portion of it (a distinction always of the utmost importance in applying that law for practical purposes), cannot otherwise be constructed than on an assumption of such total or partial population being of a stationary character. It then exhibits at once the rates of mortality at each year of age; the probabilities, at any age, of outliving any other; the sum total of the living at all ages, together with the distribution of such population into respective quantities of individuals existing at each age in particular;—and from those fundamental statements are to be concluded, with great accuracy, a train of consequences susceptible of being tabulated; amongst which the measures of life's intensity at the birth, or at any other age, and misnamed "*Expectation of life*," as also the "*Equation of life*," denominated in French "*la vie probable*," being the term which, according to any given age, there is an equal probability of attaining or not, and therefore more properly constituting the real "*expectation*."

2dly. When the considered population has been, during any material period, in progress of increase or of decrease, all natural proportions of the just mentioned *distribution* become disturbed. If the population increase, the younger lives will exist in greater or less excess relatively to the whole; and the contrary will occur when such population is on the decrease. Those distinctions, which I always find are overlooked in the arguments and conclusions of authors, have nevertheless a very considerable influence upon results which are the usual objects of research respecting these matters. The difference of distribution materially affects the *general* rate of mortality, and thereby often induces false inferences on that particular point, whilst it is astonishing to see the extent to which those false inferences are sometimes carried. It also affects the ratio of periodic mar-

riages, compared with the quantity of population; together with the average age at which the marriages take place, and consequently the average births to each marriage. Again, and for obvious reasons, that difference of distribution has a material influence, independently of other causes, upon the greater or less proportion of illegitimate births, compared with the legitimate; and in this last respect, I shall merely observe, by the way, that the stated proportion of one-twentieth only, with reference to this country, appears to me much below the mark. It is, however, very difficult to ascertain such a point, under our most miserable system of registries.

3dly. When it is inquired of the "*absolute intensity of life*,"—in French, "*la vie moyenne*," with reference to the birth or age *zero*, and in English miscalled the "*expectation of life*,"—which is, in fact, the precise measure of a *generation*—that intensity is neither to be represented by the quotient of a population, divided by the annual births, nor by the annual deaths, which yield very different results; but is in all cases expressible by a geometrical proportional between those two quotients. The nonsense that has been uttered, printed, and taken for granted, respecting such measures of intensity, as also (as a consequence) respecting the presumed increase of vitality within the last century, is quite amazing.

I shall close this letter by stating two interesting series, the grounds

Wife's Age at Marriage.	Quantity of Marriages.	Average Births to each.
At or under 16 years	22472	5·249
at 17	32578	5·102
18	47854	4·956
19	57248	4·812
20	62687	4·670
21	65980	4·529
22	64195	4·389
23	60233	4·250
24	56206	4·113
25	52200	3·975
26	48250	General average 3·839
27	44387	3·702
28	40640	3·566
29	37033	3·430
30	33586	3·294
31	30315	3·159
32	27233	3·023
33	24349	2·888
34	21667	2·752
35	19188	2·616
36	16913	2·479
37	14950	2·342
38	13254	2·204
39	11783	2·065
40	10506	1·925
41	9394	1·783
42	8424	1·639
43	7576	1·494
44	6833	1·347
45	6180	1·198
46	5606	1·046
47	5058	0·892
48	4475	0·735
49	3883	0·574
50	3335	0·409
51	2924	0·240
52	2605	0·065
53 or more	18000	0·000
	1,000,000	

of which you will find discussed in my book: the first is expressive of the distribution of one million of marriages, into proportionate quantities of those occurring at each age of the wife; and the second is the average of births attributable to each marriage contracted at those respective ages. Observe, however, that such distribution of marriages involves, in each thousand, 18 contracted at ages that exceed 53 years, taken as the limit of child-bearing; that $3\frac{3}{4}$ children then issue on a general average of each marriage within that limit of age; and that if a more considerable average should appear (which I very much doubt to be in any sensible degree the case, even in this country), it must be imputed to a more elevated proportion of early marriages than is shewn by this statement, rather than to any other cause.

The latter series has never been printed, nor have I hitherto communicated it any where, it being an essential datum towards computing the Tables for an Institution I am about to form, for the purpose of granting, at the time of any marriage, endowments to the children who may issue therefrom.

In connexion with my latter statement, a question arises, which I have not hitherto been able to solve to my satisfaction: it is of *the proportion of barren marriages.* Amongst the whole number, I am aware that such proportions vary in different countries. In France, it appears to be *one* in *fourteen*, or thereabouts, according to the information I have been able to gather there amongst gentlemen of the faculty, and averaging their various statements; but what that proportion may be in Great Britain, I never could discover, our medical men not seeming to have any opinion on the subject. I apprehend that the barren marriages are here in a smaller proportion; and if any of your readers could help me by solving the question, with tolerable approximation to the truth, I should feel very much obliged to them.

I am, sir,
Your most obedient servant,
FRANCIS CORBAUX, F.R.S.

MEDICAL GAZETTE.

Saturday, January 31, 1835.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."
CICERO.

ENGLISH AND FRENCH HOSPITAL SYSTEM.

ONE of the latest productions of the French press is an interesting volume by M. Ferrus, the physician in ordinary of the Bicêtre, who, it will probably be recollected, visited this country a few years ago in a demi-official capacity. The special object of the author's mission was to inspect our arrangements for the treatment of the insane: he was commissioned for the purpose, at his own request, by the *Conseil Général des Hospices de Paris;* and the present work* is the Rapport, giving an account of his proceedings and observations.

There must be always something—curious, at least, if not valuable—in the remarks made by foreigners on our institutions. We can scarcely fail to be more or less profited by such remarks; for by habit we become so familiarized to what is every day passing under our inspection, that we are apt to allow many things, even growing abuses, to go forward unnoticed, until we are, perhaps, awakened to a sort of consciousness of them by the observations of others. To the eye of an intelligent stranger much that to ordinary observers among ourselves possesses little or no interest, is presented with all the air of novelty, and often with no small measure of attraction. This is the case with M. Ferrus, who, while performing the task for which he was specially commissioned, could not help seeing various

* *Des Aliénés.—Considerations* 1. *Sur l'etat des Maisons qui leur sont destinées tant en France qu'en Angleterre.* 2. *Sur le Régime hygiénique, &c. &c.* Par G. Ferrus, Médecin de l'Hospice de Bicêtre, &c.

circumstances in our general system of hospital management which struck him as peculiarly deserving of notice. The comprehensive glance which he bestows on our charitable establishments generally, as compared with those of his own country, shews a "learned spirit" of observation. He has just as much impartiality as can be expected from a liberal and well-educated Frenchman: his candour we see no reason to impeach; nor have we any thing to complain of in respect to prolixity or tediousness of style—that besetting sin of most of his compatriot authors: in fact, within a very moderate compass, we find a considerable number of important subjects ably touched upon in the present volume, and treated in a manner at once animated and concise.

The curious contrast afforded by the very different mode in which public charity is administered in the two rival nations, is briefly noticed by M. Ferrus. He traces the charitable principle which actuates the benevolent in both to that motive which, in individuals, constitutes what is denominated *egoïsm* in masses, a national pride. In England, he says, this national pride, conjoined with the prevailing *fierté*, which inspires so large a portion of the community, and which, in his opinion, is often carried to excess even with charity for its object, works wonders and prodigies. The proof of this, he continues, shews itself every where in the numerous establishments of every description which are thrown open to the destitute and the unfortunate in this country. It is, however, more particularly in reference to the means of education afforded to the young, and to those precluded from the enjoyment of that blessing through the ordinary sources, by reason of some infirmity, that those advantages are thus abundantly supplied: witness the multitude of schools on the Bell and Lancaster system, the establishments for the deaf and dumb, and the institutes for the working classes in all the great towns. Here M. Ferrus candidly confesses, that though France may have shown the way in some of these arrangements, yet that England has far surpassed her in diffusing the benefits that arise from their adoption. "Among our neighbours (he says) the spirit of emulation and enterprise is general, whilst, in France, it scarcely is to be found beyond the precincts of our large towns. In England, according to the common saying, London is found every where. Among us, in point of institutions, Paris is, in too many respects, without rivals."

But the author honestly confesses the difficulty of instituting a comparison between two countries which so essentially differ in their mode of managing their respective institutions. In France, the whole business, financial as well as administrative, in the hospital and asylum system, is conducted under the authority of government: even where an establishment has been raised from funds supplied by the liberality of private individuals, that establishment is as much subjected to government patronage and protection as where it has resulted from a general tax. Not so in England: with a very few exceptions, the state interferes in no respect with the foundation or the direction of public charitable institutions. How then, says M. Ferrus, can any analogy be fairly drawn; much less how can it be pronounced which system is the better? It is probable, however, as the author adds, that *each* is *best* in its respective circumstances. "Taking into consideration the difference of manners and customs in each country, we should be inclined to conclude that that absence of interference on the part of government, to which the English character is so well

adapted, would be productive of very serious evils among us; whilst, on the other hand, the English would scarcely tolerate a surveillance which they would regard as vexatious, and opposed to all their ideas of liberty, as affects the financial and administrative arrangements of their charities."

We shall not stay to notice some other peculiarities which he observes among us, and describes with a lively vein of humour; our system of making collections at the auspicious moment after a sumptuous public dinner; the periodical meeting of governors of charities in the rich apartments allotted for the purpose; the custom, in most of our establishments, of confiding the direction to one or two individuals on whom an extraordinary degree of reliance is placed;—all this he points out as affording marked contrast between the English and the French, in their respective modes of conducting hospital business; and we think, that, upon the whole, the author is more than half inclined to give his decided preference to the French system. He is a strong advocate for the existence of an active surveillance, as most conducive to uniformity and steadiness of purpose, and to the repressing or reforming of abuses as they arise.

With regard to the *materiel* of our hospitals, we find some pertinent observations, tinctured with a just severity. The author notices what, to him, appears a curious fact—the want of any system in erecting English hospitals. No two are ever built alike; and ground-plan, elevation, and internal economy, all seem dependent on caprice or accidental circumstances. In respect to the supply of baths in our institutions, where there is no reason whatever to complain of an inadequate supply of water, M. Ferrus cannot help expressing his surprise. He found, he says, in but few of our hospitals a *service* of baths proportioned to the number of patients; and it was with pain that in the Manchester Infirmary, to which, in other respects, he gives due praise, he was informed there was but one *baignoire* for 170 beds. This palpable and extraordinary deficiency, we presume, has been remedied since the author's visit. Of late years, we know that great improvements have been adopted in many of our hospitals in the construction of suitable bath-rooms.

M. Ferrus gives us great credit for our general cleanliness, and the care taken in our frequent paintings and white-washings—a practice in which he allows we greatly surpass his countrymen. In noticing the general adoption of hammered or cast-iron bedsteads in this country, he says that in St. Bartholomew's hospital alone did he find wooden ones still in use; and the *Directeur* told him, absurdly and ludicrously enough *(par une assez étonnante bizarrerie)*, that wooden bedsteads were to be preferred, because they were most easily washed!

In noticing the *personnel* and internal management of our hospitals, he condemns the system of requiring letters of admission from patients—the existence of the disease being the sole passport necessary in France; but he rightly accounts for the maintenance of the system, from the nature of the patronage by which those establishments are supported. Another thing which he censures, with no small show of reason, is the want of arrangement in most of our charities—patients of different ages, as well as of totally different complaints, being found in the same wards: this he very properly conceives to be at once injurious to the *morale* of the inmates, and to their chances of recovery. Rather a remarkable fact is mentioned by our author in his notice of the internal

arrangements: after complaining of the undue freedom with which patients are allowed to go about from ward to ward, and to receive the visits of strangers at all hours, he says he saw, when at Guy's, people selling bad fruit going among the patients, and openly disposing of their wares!* We do not question the author's veracity; but the reader will observe that seven or eight years probably have elapsed since M. Ferrus's visit, within which time great changes for the better in every respect have taken place in the London hospitals, and we presume in those through the country at large.

The *service médical* of our establishments meets with much of the author's commendation. But among those things which he seems to consider as blemishes, we observe that he sets down the late hour of the day at which the *visit* is paid in England, whereas in France, it is, as is well known, the first thing done in the hospitals, to go round the wards early in the morning. We have not room to give the author's remarks on this subject, nor to discuss the reasonableness of the alteration he would suggest; but it may be amusing to state, that he attributes the practice just mentioned to the obstinate *laziness* of the students!

We had intended to give some further specimens of M. Ferrus, for whom we entertain much respect; but our limits for the present prevent us. We have not yet introduced him to the reader on his proper ground — relative to the arrangements for the insane: that subject we reserve for another opportunity, when we shall set forth the best things that are to be said regarding the madhouses of England and France.

* "Nous avons vu dans l'hôpital de *Guy* à Londres, des marchands de mauvais fruits parcourir les salles des malades, et se livrer sans obstacle à leur commerce."

COLLEGE OF PHYSICIANS.

The first meeting for the season took place on Monday, and was attended by between six and seven hundred persons. On the right of the President's chair was seated the Archbishop of Canterbury, on the left the Lord Chancellor. Sir Robert Peel, and others of his Majesty's ministers, as well as most of the judges, and several of the bishops, were also present. A paper was read by Sir Henry Halford, on the deaths of some eminent persons of modern times, and appeared to excite very general interest. The subject was well suited to a mixed assembly, the language classical, and the delivery excellent.

On the Deaths of some Eminent Persons of Modern Times.

Sir Henry alluded to the attention with which his paper on the Deaths of some Illustrious Persons of Antiquity had been received, as the motive for selecting his present subject, and laying before the meeting some details connected with the decease of some distinguished men of more modern times.

The learned President began his narrative by some remarks upon the monarch in whose reign the College was founded, referring to the pictures of Holbein in illustration of King Henry's manly beauty, and to the remains of him which he had seen in his coffin, and to his large arm-chair at Windsor, in proof of his stature. The state of his health in more advanced life, when he became corpulent and unwieldy, made Henry the Eighth a great dabbler in medicine; in fact, he not only prescribed as opportunity occurred, but compounded the drugs himself, as appears by a volume in the British Museum, containing a large collection of the royal *recipes*. The monarch, however, could not avert from himself the evils of mortality, and died at the age of 56, dropsical, and covered with sores.

To Wolsey, the King gave some excellent instructions how to avoid the sweating sickness; but the Cardinal, who escaped that epidemic, died of a malady which the royal physician might more easily have prevented, had he chosen — a broken heart, to which was added in his last hours an

attack of dysentery. The Earl of Shrewsbury, at whose house he had been on his road from Yorkshire, encouraged his distinguished guest to think more favourably of his health; but the Cardinal, in reply to his cheering speeches, assured the Earl that he could not live,—discoursing learnedly about his ailment, which he said within eight days, if there were no change, would necessarily produce "excoriation of the entrails, or delirium, or death." This was on the eighth day, when he confidently expected his death, and expired after the clock had struck eight, according to his own prediction—"the very hour (says Shakspeare) himself foretold would be his last."

Edward the Sixth was carried off by disease of the lungs, having had measles, as well as small-pox, the preceding year, which left an obstinate cough behind. He was put under the care of an ignorant woman by the Earl of Northumberland, by whose treatment his end seems to have been much accelerated. Sir Henry paid a high tribute to the memory of this intelligent and amiable young king, whose bodily powers bore no proportion to the extraordinary energies of his mind; in this respect reminding the learned author of many examples he has met with, wherein ill health in young persons has led to great powers of reflection, the precocity of their intellectual development "compensating them for the brevity of their earthly existence."

Mary inherited a delicate constitution from her mother. The peculiarities of her sex being irregular, and requiring frequent medical treatment, bleeding very frequently repeated, and horse exercise, seem chiefly to have been trusted to. After her marriage the symptoms were referred to pregnancy; but she became pale and exsanguine, and at length died of dropsy.

Oliver Cromwell, in his last illness, one morning asked a physician who had sat up with him why he looked so sad; and being answered, that it became any one to look grave who had the care of *his* life to answer for, immediately replied—"Ye physicians think I shall die: I tell you I shall not die this time; I am sure of it. Do not think I am mad; I speak the words of truth upon surer grounds than your Galen or Hippocrates furnish you with. God Almighty himself hath given that answer." Under this confident expectation of recovering, Cromwell allowed himself to be removed from Hampton Court to London. On the following day he became worse—grew lethargic—then delirious—and died September 3, 1658. The spleen was much diseased, and filled with matter "like lees of oil." It is difficult, continued Sir Henry, to read the history of this period without entertaining a strong suspicion that Cromwell used those solemn aspirations—that affected intercourse with the Almighty—hypocritically, and with political views. Archbishop Tillotson has remarked, that the above is a specimen of that enthusiasm which superseded hypocrisy with Cromwell; but in modern days, when we meet with such allegations in our intercourse with patients, and find them influencing their conduct, "we think ourselves justified in applying to the Lord Chancellor for a writ *de lunatico inquirendo*."

King Charles II. (according to the account of his physician, Sir C. Scarborough) had just risen from his bed when he experienced an unusual sensation in his head; shortly after which he fell down speechless, and without the power of motion. An army surgeon, who happened to be at hand, bled him to the extent of 16 ounces; after which, on the arrival of the royal physician, his majesty was cupped, and other remedies used—such as an emetic, purgatives, &c.; but he expired on the fourth day. "Had there been safety in a multitude of councillors, the king's life must have been preserved; for (added Sir Henry) I perceive the signatures of not less than fourteen physicians to one of the prescriptions." Among the remedies prescribed when he was sinking, was the *spiritus cranii humani*, 25 drops; which certainly has been improved upon in our modern preparations of ammonia. The learned Baronet here mentioned that he had lately seen a prescription in which a portion of the human skull was ordered, in a powder, for Sir Nicholas Throckmorton. It was dug out of the ruins of a house, in Duke-street, Westminster, which had belonged to Oliver Cromwell's apothecary. On examining King Charles's head, a copious effusion of lymph was found in the ventricles and at the base of the cranium; from which Sir Henry is disposed to think

that he might have been still farther bled with advantage; adding, that the result of his experience had convinced him, that, if large depletion be not adopted in the first instance, every thing else attempted afterwards will be unavailing. It is quite evident, from Sir Henry's account, that Charles II. died of apoplexy, and consequently that his indifference to the solicitations of those about him, on religious matters, can only, with charity, be attributed to the effects of his disease.

King William, the Prince of Orange, had a weak frame, and was asthmatic, with a constant cough. He died, at length, of an enormous secretion into the lungs, which first embarrassed, and ultimately prevented, respiration. The lungs were adherent to the pleura costalis, and a fall from his horse, which he had shortly before met with in Hampton Court Park, and by which he had broken his collar-bone, had detached a portion of the adhesion and excited inflammation.

Mary, the consort of William, died of small-pox, and it is remarkable that Bishop Burnet blames Dr. Radcliffe in rather harsh terms, for his treatment of her case. The learned prelate mentions that Marshall Schomberg advised him never to give an opinion upon a military subject; and "I wish (said Sir Henry) that he had received similar council from a physician, and had abstained from remarking on medical affairs." The censure of the Bishop seems to have been quite uncalled for.

Dryden died of ossification of the arteries of the extremities, such as produces mortification. His body "lay in state, in the College of Physicians, during ten days, and was then conveyed to Westminster Abbey with great ceremony."

The disease which occasioned Dean Swift to expire "a driveller and a shew," was of a paralytic nature; to which circumstance Sir Henry is inclined to attribute that aberration, not to say depravity of mind, which have excited so much scandal.

"Now I believe," said he, "this irritability was bodily disease; and so far from considering the unsocial and untoward mind as influencing the body to its detriment, I would contend that the corporal distemper was the cause of the perverse and unhappy state of the mind; that Swift's irritability was of that peculiar nature which accompanies palsy, the seat of which generally is in the brain. Swift was in the habit of suffering severe attacks of headache, and of dizziness, and occasional deafness, when young; even so early in his life as during his sojournment with Sir William Temple. In process of time, there ensued that plethoric state of the vessels of the brain which required frequent cupping; and at length the obstruction became so great as to occasion an effusion of water into the ventricles, and the loss of his faculties by apoplectic pressure. This appeared on examination of the head after death. No doubt this effusion had been preceded by inflammation of the membranes of the brain, and by phrensy. Under these attacks of inflammation and phrensy, he dealt forth his angry denunciations largely; and probably it was in one of these unhappy moments that he composed the Epitaph so injudiciously inscribed on his tombstone in St. Patrick's Cathedral."

King George I. died of apoplexy; George II. of rupture of the right ventricle of the heart.

On the affliction which attended the latter years of George III., Sir Henry did not dilate. One of his latest hours of rational life was employed in dictating a letter to the Princess Amelia, which he committed to the charge of Sir Henry Halford. It was to express his satisfaction that she had received the sacrament, and sought for comfort in religion. The Princess died within two days afterwards, and her august father was deprived of his reason.

Of the last member of the royal family who has departed this life, Sir Henry spoke in the following terms:—

"A kindred spirit to that of King George III. has lately left us, and has been received, we humbly hope, into the mansions of the blessed.

"The Duke of Gloucester's disease was seated in the liver, and involved the stomach in so much irritability as incapacitated it for receiving the smallest supply of nourishment. His powers failed, therefore, and were unequal to the completion of those processes by which his enfeebled constitution attempted in vain to disengage itself from the malady, and to terminate it.

"As the brain was not affected, his mind was left at liberty to indulge its

natural propensity to look into futurity, and to anticipate the fatal issue of the struggle of the body with the disease. With a hope, then, full of immortality, and with an entire confidence in the promises of the Gospel, the Duke easily detached himself from this world, and *desired* to begin the life to come. Never, in all my converse with the dying, did I remark more calm resignation, or a warmer piety. The pain of separation was theirs only who hung over his sick bed; to every one of whom, and to those also who were dear to him at a distance, he bequeathed his blessing, leaving to us all the *rich inheritance of his example.*

"Upon the Duke of Gloucester's merit as a soldier, it becomes not me to descant; but as a specimen of that bravery which belongs so remarkably to the House of Brunswick (I have it from the highest authority), that when the brigade which he commanded in Holland, in the revolutionary war, was drawn up before the enemy, and could not restrain its fire until it might be given with the best effect, the Duke, that he might prevent it, stepped forth before his soldiers, and interposing himself between his own troops and the enemy, walked deliberately between the two armies.

"Of his conduct in civil life, let the University of Cambridge bear testimony to the prudence and to the spirit with which he defended its privileges in parliament as its Chancellor. His memory will be cherished by that learned body long, I am persuaded, and with a most respectful attachment.

"His private virtues, which gave a dignity and a grace to his interior and domestic habits, were manifested by the steadiness of his personal friendship, by his humane care of the poor in the neighbourhood of his residence, and by his patronage and protection of a thousand charitable institutions; and were recognized and assured by the manner of his departure from life—for, in the spirit of his prayers, 'he died the death of the righteous, and his last end was like theirs.'"

In conclusion, Sir Henry adverted to the disadvantage under which unprofessional writers necessarily labour, in their attempt to develop the motives of human conduct, on account of their inability to appreciate the effects of disease on the mind.

ROYAL INSTITUTION.

Friday, Jan. 23, 1835.

Melloni's Experiments on Radiant Heat.

The evening meetings for the season were begun on Friday last, when Professor Faraday explained to a large audience the nature of those interesting experiments on heat which have recently attracted so much attention on the Continent. M. Melloni, to whose ingenuity the scientific world is indebted for this last, and not least valuable addition to its stores, is, we believe, a professor at Pavia; but the researches which have given him such celebrity have been conducted, or at all events first published, at Paris. The object of Melloni was to experiment on heat, and to procure it, if possible, independent of light; and this he effected by the previous invention of an instrument for measuring the most delicate effects of radiant heat. The differential thermometer wholly failed to answer his purpose; but by the combination of dissimilar metals, forming a pile which, upon the application of heat, should become electric, and operate on a magnetic indicator, his design was accomplished. We shall not at present enter further into an account of the construction of this instrument—the *thermo-multiplier*, as it is called: we hope to have more space at our disposal next week; but we shall mention a few of the effects of radiant heat, as indicated by Melloni's contrivance. In the first place, it is shewn that heat is transmitted through mediums not in proportion to their transparency or their thinness. Common glass, for example, intercepts 50 per cent. of heat, while rock salt, though five or six times thicker, scarcely intercepts any, or at most but 8 per cent. And so it is with other substances also, according to their structure and *colour;* as may be seen at once by the following extract from an extensive table:—

Suppose 100 rays to pass from a body, no screen being interposed, the number of rays transmitted when screens of different sorts are used, are these—

Rock salt	92
Iceland spar	62
Flint glass	65
Plate ditto	60
Crown ditto	50
Violet stained ditto	53
Red ditto	47
Yellow ditto	34
Blue ditto	33
Green ditto	23
Sulphate of copper	0

This last is a very curious fact: sulphate of copper, it appears, though used in

the form of a beautiful transparent blue crystal, extinguishes heat, or transmits none. There are probably other substances which have the same property,—at least the analogy of a great many, which have low transmitting powers, warrants us in coming to such a conclusion. It would further appear from Melloni's experiments, as demonstrated by Dr. Faraday, that heat has its own laws of refraction, as light has; and that a prism of rock-salt, through which a ray of heat is transmitted, decomposes the radiant matter, and presents phenomena analogous to those of the spectrum. But with regard to polarization, we believe it has been shewn by Professor Forbes, of Edinburgh, that no property similar to that of double refraction belongs to radiant heat. It is, we understand, the opinion of M. Melloni, founded upon his series of brilliant experiments, that heat is a substance perfectly distinct and independent of light; but Dr. Faraday conceives that he is not warranted in jumping to such a conclusion: heat and light may still be only properties of one and the same general nature, though we have no evidence of what that general nature is.

The bust of the late Mr. Fuller, by Chantrey, an admirable performance, and a fine picture of the late Lord Spencer, the gift of Pickersgill, were presented this evening to the members of the institution. The library was, as usual, plentifully supplied with articles rare and curious, for the gratification of the numerous visitors: there were specimens of zincography, anatomical wax models, new German works, &c. Dr. Ritchie was announced for next Friday (last) evening, On the Newtonian and Undulatory Theories of Light.

MOSCOW HOSPITAL.

Case of Chorea, terminating fatally; with the appearances on Dissection.

Mark Vassilieff, aged 13, affected with symptoms of *Chorea St. Viti*, was admitted a patient into Sheremetieff's Hospital on the 23d December, 1833, and transferred on the 10th of January to the Clinical Institution.

The disease exists in a great degree. His body is small and puny-looking, much emaciated, and he has a fatuous appearance; the whole countenance appears as if swollen, and it is red, the upper lip swelled, the nostrils flattened, and his features distorted, which, with the irregular motions to be immediately described, and his impotency, communicates, at first sight, an impression of disgust to the spectator, at the same time that it excites compassion for his unfortunate and helpless condition. The whole body is affected with the peculiar motions which characterise this complaint; his head is bent downwards, so as sometimes nearly to touch his feet.

In order to prevent his falling from his bed, he has been placed on a mattress on the floor, where he is now rolling himself about in all directions. When spoken to, he understands what is said, but does not speak. The skin is dry, and covered with a dry itch-looking eruption; the skin of the larger joints is thickened and hard, and the abdomen feels hard and tense, from the contraction of the muscles; its volume is moderate; he admits of no covering on his body excepting his shirt, though the temperature of the surface is low, particularly in the extremities, which not rarely appear almost livid. The tongue is moist; his appetite voracious; the pulse at the wrist weak, hardly to be felt; nothing very particular remarked in his breathing.

He is not in a state to communicate any information on the origin of his complaint, but the following has been collected from those with whom he lived.

The boy is an orphan, and has every appearance of having been little attended to. He does not appear to have formerly suffered from any other disease, or to have been exposed to any particular cause to which his present ailment might with probability be referred. About the beginning of his tenth year, his voice became hoarse, and, from time to time, various nervous symptoms, but particularly irregular movements of the muscles, began to be observed. Two years ago these symptoms increased, and gradually became worse, till about the month of October 1833; since then they have continued nearly in their present state. There is no external mark of disease about the spine, and his bowels are said to be regular. During sleep, the irregular movements nearly cease. On the evening of his admission, the following was prescribed by Mr. Ramich, one of the surgeons of the hospital.

℞ Tinct. Opii, gtt. viii.; Ph. Edin.; Castorei, gtt. xii.; Aquæ Laurocerasi, gtt. xiv.; Liq. Cornu Cervi Succinati, gtt. vi.; Aq. Puræ, ℥i.; M. Pro haustu ad noctem. Balneum tepidum cum furfure omni biduo. Frictio Spinæ dorsi cum Balsamo anodyno mane et vespere.

31st.—No change for the better, excepting that he sleeps more than formerly.

℞ Carbonatis Ferri, ℥i.; Pulv. Rhei, gr. vi.; Mellis, ℥i. M. tribus dosibus quotidie consumat.

January 7th, 1834.—State of the patient

improved; unnatural movements less remarkable; he can now stand without help on his feet, supporting himself on the side of his bed; bowels appear to be sufficiently open; fæces are more or less coloured by the medicine in use; affection of the skin much as before.—Pergat.

23d.—The state of the patient continues improved; he can now pronounce a few words.

Adaugeatur quantitis Carbonatis Ferri ad ʒiss. quotidie.

26th.—The state of the patient has undergone a change for the worse; he has passed a restless night, and has been almost constantly crying out; the unnatural movements are increased; the skin is harder than formerly, particularly in the extremities, about the joints; bowels are moved twice in twenty-four hours; voracious appetite continues.

Omit. Carbonas Ferri. Alia contin.

28th.—Increase of symptoms continues; unnatural movements seem to have increased; he passes restless nights. The skin of the right wrist and about the buttocks is incrusted, and affected with fissures. In the lower part of the spine, about the lower dorsal vertebræ, a swelling has appeared, which is rather soft and diffused, about four inches long, and two broad; it does not fluctuate perceptibly, nor does pressure on it appear to excite pain; the skin which covers it is not inflamed. The other symptoms continue.

Omit. frictio cum Balsamo Anodyno; Fricetur pars superior Spinæ dorsi Ungt. e Tartaro emetico. Balneum in usu contin.

29th.—He has had no stool for twenty-four hours.

Infusi laxativi Viennensis, ʒij. Sumat pro dosi. Alia contin.

30th.—After the use of the laxative infusion, he had two stools; slimy, but otherwise little changed from the natural appearance. The cutaneous affection seems rather to increase. The increase which had taken place these last days in the spasmodic symptoms has again subsided, and he is now nearly in the same state in which he was when he was brought to the clinical ward. He is said to be considerably incommoded by the itching of the cutaneous affection; his tongue is quite clean.

℞ Florum Sulphuris, ʒss.; Mellis despumati, q.s. ut fiat electuarium, cujus detur moles cochlearis thearii, pro dosi bis in die. Omit. medicamentum cum Tinct. Thebaica et Aqua Laurocerasi, vice cujus pulverum sequentem sumat ad noctem. Ext. Opii aquosi, gr. ij.; Aleo-sacchari Menthæ, gr. xvi. Intime misceantur et dividantur in partes viii. quarum unam capiat pro dosi ut supra praescriptum.

7th Feb.—The cutaneous affection seems rather to diminish; there is but little change in the state of the unnatural movements; sometimes, however, he is able to walk a little; he passes the night pretty well; unnatural appetite for food continues; the stools passed yesterday are strong smelling, have a less natural appearance than the last described, and contain an *Ascaris lumbricoides*.

Repetat. frictio cum Ungt. e. Tartaro stibiato, et quaque vice utatur, ʒi. pro frictione ad totum tractum Spinæ dorsi, mane et vespere. Contin balneum.

12th.—From continued friction of the chin on the breast, the skin under the first is excoriated; he is said daily in the morning to walk about for some time without assistance, but not during any other part of the day.

℞ Sulphatis Kininae, gr. i.; Amyli, gr. i. M. bis in die sumat ex melasse. Alia contin.

16th.—The emaciation of the body and general debility are increased; the bowels are open, the stools of a very vitiated nature. From the irritation of the tartar-emetic ointment, a copious eruption of pustules (which, however, in a great measure are now dried up), has been produced.

Elect. in usu semel in die tantum sumat; alia contin. Omit. pro tempore frictio cum Ungt. e. Tartaro stibiato.

18th.—The convulsive movements have ceased; no pulse to be felt at the wrist.

Omit. medicamenta in usu.

℞ Vini albi Hispan. ʒiij. detur cochleatim cum aqua tepida ex tempore ad tempus.

19th.—Died about four o'clock this morning.

Dissection.—The examination of the body took place thirty-six hours after death.

Hardly any remains of the cutaneous eruption described in the history and progress of the case are to be seen in the dead body, unless it be in the hands, where some rhagades are still visible. The body in general is very much emaciated; the upper part of the abdomen collapsed, and its skin livid, the under part in some degree swelled. The swelling is soft, but not tense.

The pericranium was unusually pale, and hardly a blood vessel is perceived. The thorax was rather more than usually

prominent. The substance of the brain was in general perhaps somewhat softer than common, but no other morbid appearances observed in this organ. The muscles of the back were of a moderately red colour, and no remains of the swelling mentioned in the report of the 28th January appear.

On opening the vertebral canal, there was observed on the external surface of the coverings of the spinal cord, through their whole course, an unusual redness, which seemed to arise partly from congestion of venous blood in the vessels of the cellular membrane of these parts, and partly from effusion of blood into it, the whole cord appearing as if imbedded in a soft coagulum of blood; in certain parts the colour of the blood was arterial. The coverings of the cord being laid open, the watery fluid of this part was discharged pretty copiously; the colour of the cord was much less red than the external surfaee of its membranes, and its substance generally softened into a pulp.

On laying open the abdomen, the swelling of the lower part was seen to have been produced by the distention of the urinary bladder. The convex surface of the liver, particularly the right lobe, adhered to the diaphragm by firm, evidently not recent, adhesion; the smaller intestines were empty nearly through their whole course; the colon contained liquid bilious fæces in moderate quantity, of different colours, and of the same nature with what had been discharged during the last days of his life; no organic disease appeared to have existed in the internal surface of the stomach and intestines; the rugæ of the former were very prominent; seven *Ascarides lumbricoides* were found in the cavity of the intestinum ileum.

The liver had a deep dull-red colour, but no notable congestion appeared in this organ, its volume small, and its substance not differing much from its common consistence, though the look of the organ was unhealthy. The heart was unusually small for a subject of 13 years, though proportioned to his stature in some degree; its internal structure natural; partial old adhesions of the *pleuræ costalis cum pulmonali* existed. The lungs and other organs were nearly natural*.

DESTRUCTION OF THE SHEFFIELD MEDICAL SCHOOL.

We regret to learn that the Medical School at Shefficld was entirely destroyed a few days ago by the populace, who, in one of those paroxysms of ignorant phrensy which occasionally seize them with respect to institutions of this nature, broke into the building on two successive days, threw the books, papers, preparations, and whatever they met with, into the street, and ended by breaking the window frames and tearing up the staircases and floors, which they deliberately burnt before the door. We must add, that our accounts of this disgraceful riot, which it at last required the intervention of the military to quell, lead us to suppose that a great want of arrangement and energy is attributable to the civil authorities.

* Edinburgh Medical and Surgical Journal.

LITERARY NOTICE.

In the ensuing autumn will be published, in one vol. 8vo. a System of Human Anatomy; compiled from the Works of Cruveilhier, Meckel, and other Authors of celebrity, with Notes, by Mark Noble Bower, M.R.C.S.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *Jan.* 27, 1835.

Abscess	3	Hooping-Cough	16
Age and Debility	75	Inflammation	67
Apoplexy	14	Bowels & Stomach	2
Asthma	48	Brain	5
Cancer	2	Lungs and Pleura	33
Childbirth	10	Jaundice	1
Consumption	85	Liver, diseased	17
Convulsions	44	Measles	23
Croup	3	Mortification	3
Dentition or Teething	10	Paralysis	2
Dropsy	22	Small-Pox	16
Dropsy on the Brain	17	Sore Throat and Quinsey	1
Dropsy on the Chest	2	Spasms	1
Erysipelas	1	Thrush	3
Fever	7	Unknown Causes	14
Fever, Scarlet	14		
Gout	2		
Heart, diseased	1	Stillborn	31

Increase of Burials, as compared with the preceding week . . . 211

NOTICES.

DR. LYONS ON CLUB-FOOT.—There were some sketches sent with the paper on Club-foot, which we lately published; but we did not think them necessary for the elucidation of the subject, and could not well afford space for their insertion. The name of the second patient, by the way, we are requested to state was Filler, not Triller.

Mr. RICKMAN'S paper has been received. It shall appear in our next.

The *very extraordinary* account of the Nose operation, "done" at the Valetudinarium on Saturday last, has reached us.

ERRATUM.—In the case of Henry Ingram, published in our last number, page 604, col. 1, in the second prescription, the quantity of nitrate of silver ought to have been gr. i. instead of gr. iv.; and in the third prescription, the dose of liq. arsenical. ℿv. instead of ℿx.

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THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, FEBRUARY 7, 1835.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

BY THOS. DAVIES, M.D.

LECTURE XIX.

SIGNS OF PLEURISY.

WE now, gentlemen, proceed to consider the signs of the different stages of pleurisy.

1. *Red, or Acute Stage.*

Local signs—Pain.—One of the most constant signs of this stage is a violent pain in the side. It occurs generally at the point corresponding to the inflamed part, which is usually along the line of the 6th, 7th, or 8th ribs. Laennec observes that this sensation sometimes is felt on the healthy side only. I cannot say that I have ever yet distinctly met with an instance of this variation. The pain is always augmented by inspiration and coughing, in consequence of the lungs being pressed against the inflamed pleura by these movements.

Rheumatism of the muscles of the chest, or *pleurodynia*, often produces pain similar to that from pleurisy. The diagnosis may easily be determined by desiring the patient to move his arm in various directions: these acts will be rendered difficult if the pain be caused by pleurodynia, but not so if it arise from pleurisy. The inflamed muscles are also tender upon pressure, and there is generally rheumatism in some other part of the body at the same time.

In severe cases of pleurisy, the patient endeavours to breathe with the healthy lung only, in consequence of the pain which the inflation of the organ on the diseased side occasions. Examine the affected side, and you will perceive that the ribs are almost immovcable. The same circumstances occur also in pleurodynia.

Respiratory murmur. — As the patient rarely fully dilates the lung corresponding to the inflamed pleura, the respiratory murmur becomes very obscure and indistinct.

Functional signs.—Dyspnœa is always present, but it varies greatly in its intensity, according to the degree and extent of the inflammation. This sign depends not upon any disease of the lung itself, but upon the pain which a full or even ordinary dilatation of it gives, so that the patient breathes by short inspirations, which must necessarily be frequently repeated to establish the balanee between the quantity of air and the quantity of blood in the lungs. It is in this case that the inspirations are shorter in their duration than the expirations.

The dyspnœa would, of course, be more severe if any disease of the bronchial tubes, or pulmonary structure, were combined with the pleurisy.

Cough is by no means a constant sign of this stage of the disease; if it be present, it is usually slight, dry, and infrequent, except there be catarrhal combination; then there will be an expectoration, more or less abundant, of mucous or pituitous fluids.

General signs—Fever.—Intense inflammatory fever frequently accompanies this stage; it usually lasts but a few days, and ceases upon the disappearance of the pain in the side. It does not follow, however, because the fever and pain cease, that the disease is cured; for effusion will frequently still continue. The dyspnœa then slowly increases, a slight febrile action reappears, and upon a local examination of the chest, you will find the signs of effusion becoming daily more manifest. The slightest dyspnœa and fever occurring after the apparent

cure of acute pleurisy, require your utmost attention.

2. *Stage of Effusion.*

We shall first describe the signs of the increase and accumulation of the fluid, and secondly of its decrease.

Local signs; Increase—Respiratory murmur.—As soon as a thin layer of fluid is formed between the pleuræ, the respiratory murmur almost instantly ceases; its cessation is so sudden, that it would appear that the lung was at once arrested in its movements by a sort of suffocation. The fluid may even afterwards slightly increase in quantity, and the respiration be occasionally heard, although at a distance, appearing as if the organ had accommodated itself to the pressure to a certain degree, so that it could perform its movements, although to a slighter extent than natural. As the fluid increases considerably, the lung becomes so compressed, that very little air enters it, and the sound of the respiratory murmur is then totally lost.

There is, however, a certain point of the chest at which the respiratory murmur is almost always present during this stage; it is between the base of the scapulæ and the vertebral column. This space corresponds to that occupied by the compressed lung. Whenever, also, the organ is retained at a spot by previous adhesions, there also the murmur may be heard: thus it is sometimes distinct at the summit of the lung, or even at the side of the chest; in the latter case it is generally circumscribed to a space of inconsiderable dimensions. Occasionally, too, the effusion is so slight as not to reach as high as the upper lobe, to compress it. In that case the sound is there distinct also.

In proportion to the diminution of the respiratory murmur on the diseased side, the necessity for respiration increases in the healthy lung; the functions of the latter become more energetic; its movements quicker; the expansion and contraction of its cells more active, and consequently the respiratory murmur is louder, and assimilates to that of children, from whence it is called *puerile respiration*. The respiratory sounds of the healthy lung are sometimes so intense, that they may be even slightly heard through the accumulated fluid, giving the sensation of their arising from the compressed lung. A little practice will soon, however, correct any error that might arise from this circumstance.

As a total absence of the respiratory murmur occurs also in a hepatized lung, it is necessary to observe, that in the latter case it is never sudden, and is always preceded by crepitation, the sign of pulmonary engorgement.

Œgophony.—When a slight layer of fluid exists between the pleuræ, œgophony becomes its sign. I have entered so largely upon this sign in my lecture on Auscultation, that it is unnecessary to repeat it here; but I refer you to that lecture. I shall, however, state, that œgophony appears when the effusion commences; that it disappears when it becomes abundant; that it may remain for many months when the fluid continues in a small quantity; that it is most complete at the upper edge of the effusion, or where the layer of fluid is thinnest; that it may be accompanied by *bronchophony*; and, finally, when the sound is heard all over the chest, it may be affirmed that the effusion is slight, and uniformly spread all over the lung. In the latter case the respiratory murmur may still be slightly heard, because the layer of fluid is not sufficient to compress the lung, so as to prevent the air penetrating it; and if these latter circumstances continue during the whole period of the disease, you may be certain also that the lung is retained at a small distance from the ribs by cellular bands disposed here and there between their surfaces.

Percussion.—Although the sound on percussion is usually loud in proportion to the quantity of air contained in the lungs, yet in this case, a small quantity of fluid placed between the pleuræ seems as effectually to destroy the natural sound as a larger. Thus it is, that as soon as a thin layer of fluid is formed, indicated by œgophony, percussion gives a perfectly dull and fleshy sound, which, of course, remains during the augmentation of the fluid.

Signs arising from the pressure of the fluid upon the surrounding parts.—You recollect, gentlemen, that when I described the morbid anatomy of this stage of pleuritis, I described also the effects of the pressure of the fluid upon the surrounding parts. We must now attend to the signs of these effects.

The lung is first acted upon, diminished in volume, and pressed against the vertebral column, accounting therefore for some of the signs we have just mentioned, as the absence of the respiratory murmur all over the affected side of the chest, excepting the space comprised between the base of the scapula and corresponding vertebræ; accounting, too, for the dulness of sound on percussion. The heart is also pushed from its situation, so that if the effusion exists in the left side of the chest, that viscus is forced over to the right, consequently the sounds of its beatings are often entirely lost at its natural position, and are heard only immediately beneath the sternum and at the right side of that bone. If the fluid be on the right side, the heart is forced beyond its na-

tural position to the left, and the sounds are heard farther in that direction. The fluid then depresses the diaphragm, but that pressure is resisted on the right side by the liver, so that the latter organ is rarely sufficiently displaced to force its anterior edge below the margins of the cartilages of the false ribs; but when the left side of the diaphragm is pressed down by the fluid accumulated upon its superior surface, it forces the stomach before it, and a considerable irregular and diffused swelling is produced below the margins of the cartilages of the left false ribs.

In examining the effects of the pressure of the fluid outwards, you will remember that I stated that the internal surfaces of the intercostal muscles were brought to a level with the external surface of the ribs, by which all appearance of intercostal depressions between the ribs is entirely effaced, giving to the whole side a general smoothness singularly contrasting with the healthy side of the chest. The ancients considered œdema of the surface to be a sign of effusion, but I have no doubt they have confounded that state with the smoothness and fulness I have just mentioned. Be that as it may, I have never seen the skin pit upon pressure in more than two or three instances in above thirty cases. You will recollect also, gentlemen, that I described the ribs as projecting outwards, whereby the diseased side becomes more or less enlarged: this may readily be detected by the eye. Confirm this sign by measuring the chest as I have directed, and you will find that the difference in the circumferences of the two sides will often be considerable. I have seen it from a quarter of an inch to two inches. These variations of course arise from the different quantities of fluid contained.

Immobility of the ribs.—Another valuable sign of effusion is the immobility of the ribs of the diseased side. The reason of this is obvious: if the lung be so compressed as to receive no atmospheric air, the respiratory functions are not carried on in it, and of course the action of the ribs is unnecessary. If the quantity of fluid be large, you will see that the side affected is perfectly immoveable, forming a striking contrast with the opposite, where the ribs are elevated and depressed with considerable rapidity, in consequence of the respiration being carried on in the healthy lung only.

Position of the patient. — If the patient place himself upon the healthy side, the fluid compresses the mediastinum and opposite lung, and produces a sense of suffocation. He almost invariably, therefore, places himself upon the diseased side.

Such, gentlemen, are the signs of effusion, upon its increase and utmost accumulation. I will now mention those by which its diminution can be ascertained, and the formation of cellular membrane or fibro-cartilage determined.

Signs of formation of cellular tissue, or fibro-cartilage, or of decrease of effusion.—As the absorption of the effused fluid takes place, if the lung be not bound down too firmly by a false membrane, that organ gradually dilates, and in proportion to its expansion the respiratory murmur becomes again audible: the sound is at first most distinct where it had never entirely ceased—that is, between the base of the scapula and the corresponding vertebræ. As the fluid recedes from the upper part of the pleuritic cavity, the murmur is heard at the anterior-superior part of the lung, on the summit of the shoulder, and in the axilla; and as the secretion still farther diminishes, it becomes distinct successively at the various parts of the chest, from above downwards. If, however, any previous adhesions exist, such as I have already described, the murmur is first heard at the points corresponding to them.

Let us suppose that the absorption continues: the layer of fluid between the pleura then becomes thinner, and the œgophony returns; the *œgophonia redux* of Laennec. This sign ceases with the total disappearance of the fluid.

The sound on percussion is often a long time before it becomes natural, and in some cases, perhaps, never.

The mobility of the ribs returns in proportion to the degree of expansion of the lung.

All the symptoms I have described are proofs of the absorption of the effused fluid; but the only pathognomonic sign I am aware of, denoting the union of the pleuritic surfaces by cellular tissue, and not by fibro-cartilage, is, that in the first case the chest does not contract, nor do the sternum and vertebræ deviate from their natural position on the median line; while, in the second case, the contraction and deviations are always more or less considerable. The reasons of this difference appear to me to be as follow:—

If the adhesions be of a fibro-cartilaginous character, it is always a proof that the original false membranes were thick, that the lungs were bound down proportionably, and that consequently the freedom of the expansion of that organ was diminished. It is under these circumstances that nature makes her great effort to approximate the parietes of the chest to the compressed lung; and when that is effected, which it occasionally is, then the union of the two false membranes form fibro-cartilage. As the extent of the contraction is in some degree a measure of the

compression of the lung, and of the thickness of the membrane binding it down, so it becomes a sort of measure of the thickness of the united false membranes.

On the other hand, when the lung fully dilates, the compression inwards of the diseased side of the chest is unnecessary; the false membranes then do not exist at all, or are very thin. Thin false membranes do not form fibro-cartilage, but cellular tissue; therefore, when you find that after the signs of effusion have disappeared, the chest is not contracted, you may pretty certainly infer that the adhesions are of cellular tissue. Look to this subject for yourselves, gentlemen, and you will find your post-mortem examinations will bear me out in my assertion.

Functional signs of effusion.—The principal functional sign of effusion into the cavity of the pleura, is *dyspnœa;* which is generally of an intensity proportionate to the quantity of fluid accumulated. As, however, the disease becomes chronic, the general emaciation of the body and diminution of the mass of the blood is so great, that a less quantity of that fluid is sent into the lung than in the healthy state, and consequently less air is required; and for this reason the difficulty of breathing is not always in proportion to the quantity of fluid effused. If a catarrh co-exist, the dyspnœa is of course increased. *Cough*, if it be present at all, is usually dry, or the expectoration consists only of a small quantity of pituitous matter.

General signs of effusion.—As the effusion becomes chronic, great emaciation is the consequence. I know of no disease in which the body becomes so attenuated, except in phthisis, or after fevers of long duration.

Causes of pleurisy.

The causes of pleurisy are the same as those of other inflammatory affections. The disease may take place in individuals of all temperaments and ages; those of thin stature and of narrow chests are the most predisposed. Exeesses of all kinds favour the action of the external causes, by diminishing the general powers of the system. The external causes are exposure to long-continued cold, or sudden transitions from heat to cold, or from cold to heat; suppression of habitual evacuations, blows, fractured ribs, &c.

Treatment of Pleurisy.

Acute or red stage.—Our indication here is to destroy the inflammatory orgasm, and one of the most powerful means of effecting it is by venesection: the moment, therefore, that the pain in the side presents itself, a bleeding should be practised proportionate to the intensity of the disease and to the power of the patient. I need not repeat here, that one copious bleeding is more effectual than a number of small ones; thus it is the practice in this country to bleed until the patient be completely relieved, so that he can breathe freely and without pain, or until he faints; and it often occurs that by this bold proceeding a farther abstraction of blood is unnecessary. This means should be repeated while the pain and fever continue with any degree of intensity. When the force of the pulse is diminished, and the pain in the side, although lessened, nevertheless continues, topieal bleedings are useful—as cupping, or leeches; these may be followed by hot fomentations, although the latter are of little use unless they be continued for a considerable time, as an hour or two, or until the patient falls into a copious perspiration.

The tartar emetic has been employed in this stage of the disease, but its effects are not equal to those produced by mercury; and I state here, what I believe I have mentioned before, that the tartar emetic seems to have most power in reducing inflammation of the parenchymatous structures, and mercury that of the serous membranes; at least such is the result of my experienee.

From the commencement of the disease, after clearing the bowels, I begin the free use of mercury, by administering calomel every three hours, in doses of two or three grains, combined with a quarter of a grain of opium, if the bowels are irritable; if that irritability be great, the safest method is, then, to rub in freely the strong mercurial ointment instead, and you will almost invariably find that when the mouth becomes tender, the inflammatory symptoms are all subdued.

Blisters are also advantageous, when some relics of pain are left, and when the inflammatory fever has subsided; but if the pulse be quick and full, and the skin hot, I think they only irritate, without producing any good effect upon the disease. Mustard cataplasms are the best applications for children.

It is hardly necessary to state, that during the treatment of this stage the diet should be strictly antiphlogistic.

Stage of effusion.—But, gentlemen, when we arrive at the stage of effusion, and when that state has become chronic, our indication is altogether changed: we have no longer an inflammatory action to subdue, but we have to facilitate the absorption of a fluid. Nature is most frequently sufficient to effect this herself; but when the fluid largely accumulates, and especially when the false membranes form, then her process is too slow to be compatible with the safety of the patient, and art must

supply the remedies, which frequently, although not always, are successful.

The indication, then, is to cause the absorption of the effused fluid. Various means have been adopted with this view, as purgatives, particularly the elaterium. Mercury, powerful as it usually is in effecting absorption, rarely succeeds in this case; diuretics, too, are but faithless remedies here. The acetate and nitrate of potash, the squills, digitalis, &c., have all been successively used, but they have not fulfilled the indication. Counter-stimulants, as blisters, setons, and cauteries, rarely either render much service.

Why are these means, usually so active in promoting absorption, so powerless in these cases? It is because the false membranes lining the inflamed parts, and enclosing the fluid as in a bag, are themselves inorganic, or nearly so. How is the function to be performed through so thick a structure of inorganized lymph? It is scarcely possible. If, then, after having tried these remedies,—and it is proper you should try them, for you cannot be certain at this moment that the false membranes exist at all,—you find you make no progress, and that the patient daily becomes worse, you should then evacuate the fluid by mechanical means—by performing the operation of *paracentesis thoracis*. As I have had occasion to direct this operation frequently, and have proposed certain modifications in effecting it, perhaps I may be excused from entering into some details upon the subject.

Paracentesis thoracis.—Our time does not permit us to enter into the history of this operation: it was evidently performed by Hippocrates, and those of his school; for the directions they give are too practical not to have depended upon actual experience. The history of the operation of paracentesis thoracis resolves itself into the description of the various opinions as to the place where it should be performed, and the means by which the chest should be perforated. I refer those who wish for information upon this subject to the ninth volume of Sprengel's History of Medicine. I have proposed the following means of evacuating fluid from the chest.

In the first place, re-examine your patient with the utmost care; satisfy yourself that the percussion gives a dull sound; that there is no respiratory murmur; that the heart is pushed out of its situation; that the movements of the affected side are nearly or wholly lost; that the intercostal spaces are effaced, giving to the whole side a round and smooth appearance; and, finally, assure yourself by mensuration that the diseased side is the larger. If all these signs co-exist, you may be certain that fluid is present.

I have proposed an instrument by which you may prove the existence of the fluid with but little pain, and no danger, to the patient: it is the needle I present to you: it is somewhat thicker than that used for acupuncturation; it is about two inches in length, pointed like a trocar, and has a groove running nearly to its point: the groove should be made as deep and as wide as the thickness of the instrument permits. Selecting the centre of the most bulging part of the chest, which is usually between the seventh and eighth ribs, and about a hand's breadth from the spine, I then carefully examine for the intercostal space by feeling for the edges of the ribs (for you recollect that the appearances of these spaces are lost to the sight), and introduce the instrument as nearly as possible into the centre; for if you pass it upon the superior edge of a rib, you will find that the moment the intercostal muscles are pricked by it, they will contract and bring the two ribs together, so that instead of penetrating the space, the point of the instrument will strike the bone itself, be thrown up, and you may be foiled in your attempt, simple as it is, and endanger also the intercostal artery. If, however, you perforate the centre of the intercostal space, you can easily penetrate into the chest.

The needle being introduced to about three-quarters of its length into the pleuritic cavity, determines at once the presence of the fluid, and, what is equally important to the future steps of the operation, its nature; for if it be serous, it will pass readily along the groove, and trickle down the back of the patient; if it be puriform and thick, it will not freely flow, but a thick drop or two will be seen at the external orifice; and on withdrawing the instrument you will find its groove filled with pus. In the first case, you may satisfy yourself that the false membranes scarcely exist at all, or at least are so slight that the lung may expand freely, and therefore more fluid may at once be evacuated; in the second, the probability is that the membranes are of greater thickness—that the lung will consequently be less free in its movements—and therefore that but a small quantity of fluid should be allowed to flow at a time. The different degrees of thickness of the matter shew you also the size of the trochar you should subsequently use, as a small one is sufficient for the evacuation of a serous fluid, but a large one only permits the continuous flow of thick puriform matter.

The advantage of this instrument is, that it demonstrates the presence of the fluid, and allows, therefore, the future steps of the operation to be conducted unhesitatingly; that it causes but little pain to the

patient; and is as harmless in its effects as an acupuncturation needle.

Having withdrawn the needle, you may then introduce a trochar, the size of which, as I have already hinted, should be according to the thickness of the fluid you have discovered; if it be mere serum, a small hydrocele trochar is sufficient; if it be a thick puriform matter, a much larger instrument must be introduced, otherwise the flow will be tedious. I recommend you, gentlemen, to be extremely careful in having the instruments sharply pointed, for if they be not, after the pleura has been penetrated by them, the false membrane, from its imperfect attachment, may be driven before the point, and the operator foiled.

The quantity of fluid you should permit to escape must be according to its thickness; if it be mere serum, you may evaeuate two or three pints, and the lung will freely expand; if puriform, I generally allow from twelve to sixteen ounces to flow before I stop it,—recollecting that the lung is then, to a certain degree, bound down by the false membranes.

It now becomes necessary to establish a communication between the pleuritic cavity and the exterior; for this purpose, I fit a portion of gum-elastic catheter, previously cutting off its rounded extremity, into the canula of the trochar, and pass it through that instrument into the chest, to the distance of about three inches; the canula may then be withdrawn, allowing about four inches of the catheter to remain at the exterior, which may be secured in its position by tapes attached to it, and passed round the body: the whole should be still farther secured by adhesive plaisters.

The fluid now passes through the catheter instead of the canula of the trochar, and you may stop the flow by introducing a small plug, made of a portion of bougie, into the external extremity of the former instrument. Having thus a free communication at will, I daily evacuate a certain quantity of fluid, retaining the catheter in the wound for two, three, or four weeks; in fact, until I can obtain no more fluid. You need not be apprehensive of the presence of the gum-elastic catheter in the cavity of the pleura; I have never seen it do harm. From its elastic nature, it soon bends, and places itself closely to the inside of the ribs.

You will often find that after the second day sufficient ulceration is effected, by the presence of the catheter in the wound, to enlarge it; in that case the fluid flows, though very slowly, by the side of the instrument. I endeavour to favour this by directing the patient to lie upon the diseased side. Often, after the instrument is entirely withdrawn, a fistulous orifice will remain for some weeks, from which a slight discharge passes. I have always seen that this circumstance is favourable, and have never observed danger to arise from it. Some have feared that air would enter, and occasion inflammation. No doubt air frequently does enter into the cavity, but I have not perceived it produce this result; indeed, the slightest reflection must shew us, that the false membranes are as yet incapable of inflammation, in consequence of their inorganic nature.

Laennec states that the operation for empyema is rarely attended with success. I cannot agree with him in that opinion. If he had said that the operation, when performed for the cure of pneumothorax combined with effusion, was generally unsuccessful, I most fully agree; for it has occurred to me, that out of sixteen individuals in whom paracentesis thoracis has been performed for simple effusion of serum, or puriform matters in the chest, twelve have perfectly recovered, and four only have died. Where, however, there has been a combination of pneumo-thorax and effusion of fluid, the operation has been invariably unfortunate in its results. The reason of this difference will be rendered obvious when I treat of the latter disease.

The causes which render the operation for simple effusion unsuccessful, are the existence of tubercular or other disease in the lungs, and above all, the degree of thickness of the false membrane, which prevents the contracted lung from expanding. I have found that children most frequently recover, probably from the lungs being more commonly healthy in them, and from the great pliability of their chests, by which the parietes fall in more readily upon the contracted lung.

I shall in the next lecture offer a tabular view of these operations, with their results.

OBSERVATIONS

ON THE

PATHOLOGY OF NERVES.

By Hugh Ley, M.D.

Physician-Accoucheur to the Middlesex and the General Lying-in Hospitals.

[Continued from page 626.]

Causes of Inflammation of Nerves.

Inflammation may be produced by a variety of causes, amongst which may

be enumerated exposure to cold, exemplified in the painful affections of the face which occasionally arise from that cause. It is, however, in my estimation, very doubtful whether in these cases the direct impression is made upon the nerve. It appears, upon the whole, more probable that surrounding textures are first attacked, and that the nerves become implicated by simple extension of disease. It is rare to observe, from such cause, the affection of nerve without preceding swelling of the face; whilst the swelling of the face is of every day occurrence, without being attended or followed by any neuralgic affection. The symptoms vary according to the nerve which is affected. The sensitive branches of the fifth pair being the most superficial, are most liable to inflammation; and hence the frequency of tenderness of the cheek, teeth, jaws, and even complete facial neuralgia, which will generally subside with the subsidence of the inflammation. Sometimes, however, the portio dura has been affected either primarily or secondarily, when convulsive movements supervene, as has been remarked by M. Jolly with respect to the "névralgie sous orbitaire," which, he says, is sometimes accompanied with convulsive movements of the lower eye-lid, the cheeks, and the upper lip, and in the "névralgie maxillaire," which is often attended with partial convulsive movements, producing deformity of the mouth and eye-lids*." Still more frequent examples of the direct influence of cold in producing neuralgic complaints will be found in that form of ischias, first particularly noticed by Cotegno, under the appellation of the "ischias nervosa†." This is constantly the result of exposure either of the whole body when heated, or of the part itself—as in sitting upon damp grass—to cold; and the symptoms, treatment, and dissection, all tend to prove that, in such cases, both the neurilema of the nerve, and frequently the medullary filaments themselves, are inflamed.

M. Martinet, in his very interesting memoir on Inflammation of Nerves, has given a striking instance of the influence of cold. It is stated that pain in the course of the right sciatic nerve began soon after exposure to cold when in a state of perspiration; and dissection exhibited the nerve thickened to double its natural size, for an inch and a half after its escape from the pelvis, of a violet colour, and dotted with ecchymoses; the neurilema connecting the medullary filaments being in a state of congestion and inflammation*.

The ulnar nerve also, from its superficial situation, is subject to a similar malady from the same cause, the frequent operation of which in occasioning neuralgia has been particularly noticed by M. Jolly. "Les individus qui, par état, sont habituellement soumis aux effets du froid et de l'humidité, tels que les pêcheurs, les marins, etc. ceux qui habitent des contrées marécageuses, qui s'exposent à l'impression d'un vent froid et piquant, à l'effet des vicissitudes atmosphèriques, sont particulièrement exposés aux névralgies. En cela, l'axiome si connu des anciens: '*le froid est l'ennemi des nerfs* est d'une exactitude parfaite†.'"

Mechanical violence is no unfrequent cause of inflammation of nerves, and this whether the injury be a contusion, or consist in the partial division of a nerve by a pointed or cutting instrument. A blow upon the eye-brow has produced tic douloureux in all the parts supplied by the supra-orbitary branch of the fifth pair‡. A laceration of the scalp by a fall from a horse, implying some contusion of the nerves, has produced "headache and pain along the course of the nerves on one side of the head, a tenderness and indescribable sensation on the scalp, a puffing of all that side of the face, and swelling of the eye-lids of the same side§." A gun-shot wound of the arm, implicating the biceps and coraco-brachialis muscles, as well as the radial and internal cutaneous nerves, has caused severe neuralgia, afterwards attended with convulsive movements‖. An injury also from a gun-shot wound, upon the outside of the leg, has been the cause of very severe neuralgia, with convulsive movements of the limb, which continued eight years, until relieved by the division of the nerve ¶. Of

* Diction. de Médecine et de Chirurgie pratiques. Art. Névralgie.
† Sandefort's Thesaurus.

* Rev. Méd. 1824.
† Art. Névralgie, in Dict. de Médecine, par MM. Andral, Béjin, &c.
‡ Swan, p. 24.
§ Bell on Nervous System, App. xcvii.
‖ Campagnes de M. Larrey. Descot, p. 82.
¶ Descot, on the authority of M. Ribes, p. 83.

a similar kind is the interesting example of "symptoms resembling tic douloureux, from a wounded nerve," related by Mr. Denmark*. The fragment of a musket ball, lodging amongst the posterior filaments of the radial nerve, "produced such exquisite torture" as to induce the patient not only cheerfully to submit to, but even to court, amputation, which afforded some chance of relief to his suffering. A small tumor could be felt on the site of the wound on the anterior part of the arm, which he could not bear to be touched without evincing additional torture. He described the sensation of pain as beginning at the extremities of the thumb and all the fingers, except the little one, and extending up the arm to the part wounded. It was of a burning nature, he said, and so violent as to cause a continual perspiration from his face. His agonies, he observed, were insufferable, depriving him of sleep, and the enjoyment of his food. The little sleep he had, if it could be called such, was disturbed by frightful dreams and starting. All movement gave him great pain; but he had little control over the action of the muscles. The fore-arm was constantly bent in the supine posture, and supported by the firm grasp of the other hand; the wrist was also bent, being unable to move it in any other position by the voluntary exertion of its own muscles. He could bear the extension of the hand, but with increased pain. It always, however, upon the removal of the extending power, fell into its former bent situation. The act of pronation he could also bear to be performed by Mr. Denmark, but in like manner with increase of pain. Amputation above the elbow gave instantaneous relief, and he was discharged from the hospital (Hasler) cured in three weeks, having in that time rapidly recovered both his health and strength. On dissecting the arm, the radial nerve was found *blended with, and intimately attached to, the wounded parts, for the extent of an inch.* It had been wounded, and at the place of the injury was "*thickened to twice its natural diameter*," and seemed as if contracted in its length. A small portion of the ball, which had been driven off by grazing the bone, was firmly imbedded amongst the fibres in the posterior part of the wounded nerve. The nerve was *evidently thickened* both above and below the wound.

This case presents to our notice several points of very considerable interest. It is clear, in the first place, that the symptoms were not the result either simply of the mechanical injury, or of the mere lodgment of the fragment of ball amongst the filaments of the nerve; for after receiving the wound, a considerable interval elapsed before the symptoms occurred. "The wound soon healed, and without manifesting any particular symptoms during the cure." The period which elapsed between the infliction of the injury and the occurrence of the symptoms is not mentioned by Mr. Denmark; but in one of the two cases just referred to, eight days, and in the other eighteen, elapsed after receiving the wound, before the symptoms of inflamed nerve manifested themselves. Secondly, the sensations of the patient presented the well-marked characters of inflamed nerve. Such was the inordinate sensibility, that the torture from touching the tumor was exquisite; the pain also at other times being such, that "the largest doses of opium could not assuage it," and was "of a burning nature;" and, lastly, the case seems to confirm the principle so amply and aptly illustrated by Sir Charles Bell, Magendie, and others, that the fibrils of sensation are, throughout their whole course, distinct, though contained within the same external covering, from those of motion; for it does not appear that there were any convulsive movements throughout the progress of the disease, although "the symptoms resembling tic douloureux" were so insupportable. Upon the whole, the case is an admirable illustration of inflammation of a nerve, producing its ordinary symptoms, occasioned by severe mechanical violence done to the nerve itself.

Ligatures upon nerves may be considered as modes of mechanical violence, nearly allied to contusions. If these are so thick as not completely to destroy the continuity of the nerve, or to intercept altogether the transmission of nervous influence, the symptoms during life, and the appearances upon dissection after death, or after a surgical operation implying the removal of the injured portion, abundantly establish the existence of inflammation. This appears from the experiments of Swan, Descot, and others, and from the occasional re-

* Med.-Chir. Trans. vol. iv. p. 48.

sults of some operations in surgery. In the experiments above adverted to, an almost invariable consequence of the application of a ligature around the trunk of a nerve was thickening, with increased vascularity, and the effusion of coagulable lymph; but the most interesting illustrations are those which occasionally present themselves in amputated limbs, where the ligatures applied to bleeding vessels have, in the hurry, confusion, and want of proper assistance immediately after an action, or upon the field of battle, also entangled their accompanying nerves. In such cases the symptoms are often inordinately severe; the neuralgia is insufferable, the convulsions violent, and in some instances it would seem that even tetanus has been the result, and has been checked *in limine* by the removal of the ligature *.

Punctured wounds also afford illustrations of the effects of an inflamed condition of a nerve, and this even more frequently than contusions; for nature has generally taken care to protect nerves against the ordinary accidents of life, although they are not beyond the reach of such great violence as will fracture and splinter bones†, or of gun-shot wounds ‡, or of such sharp and penetrating wounds as the prick of a gooseberry thorn §, an angular piece of porcelain ‖, or the point of a lancet in one of "the occasional ill consequences of venesection¶."

It was long thought, that, where a nerve suffered from a punctured wound, the symptoms arose from its partial division; and this opinion has received, to a certain extent, the sanction of one of our most recent and industrious writers upon the diseases and injuries of nerves. "If," says Mr. Swan, "a fibril be partially divided, or if it be wholly divided, and at the point of division it be connected with the adjoining fibril by filaments, the retraction of the divided parts will stretch these filaments, and thereby cause considerable pain." But a subsequent observation of this judicious author goes far to prove that his confidence in this speculative opinion is not implicit; and it seems scarcely to be borne out even by his own experience, the results of which he thus states:—"By far the greatest number of injured nerves in venesection, is made troublesome by using the arm too soon, *and bringing on inflammation; for I have never seen any bad consequences in those patients who have been so ill as to be unable to do any thing.*" Soemmering was well acquainted with the fact, that nerves might be partially divided without being attended with serious results, and he must therefore have been equally aware, that the mere partial division could not have been the cause of the symptoms; but it is to the late Mr. Abernethy that we are principally indebted for the more correct views now entertained upon the subject. His acute and inquiring mind led him, "with the eye of reason as well as of observation," (to adopt one of his own eloquent expressions,) to see in the period which commonly elapses between the infliction of the injury and the appearance of its occasional serious consequences, time for, and the probable occurrence of, some intermediate state to which the symptoms should be referred. He was well aware that numerous instances occur, in which the nerve has been wounded in bleeding, without being followed by any particular symptoms. He also well knew, that, when evil consequences are the direct result of an injury inflicted upon a nerve, and not of the more remote effects of that injury, they are synchronous with the infliction of the injury—as in cases of paralysis from completely dividing, or convulsive movement from pricking a nerve with any pointed instrument;—whilst in partially divided nerves from bleeding, or other punctured wound, days commonly elapse before bad symptoms occur. It was therefore the opinion of this intelligent surgeon, that in the interval, from exposure to cold, or other causes extrinsic or internal, "an inflammation of the nerve may accidentally ensue, which would be aggravated if it were kept tense in consequence of imperfect division;" and further, "that the disease consists in inflammation of the injured nerve; and that this inflammation may happen with or without total division of the nervous cord*."

This opinion, which was with Mr. Abernethy but a shrewd conjecture, deriving confirmation, however, from the observations of Pott and Monro upon

* M. Larrey.
† Swan.
‡ Larrey. Ribes.
§ Wardrop.
‖ Jeffries.
¶ Abernethy.

* Abernethy's Surgical Works, v. ii. p. 161.

the same point, subsequent inquiries have essentially corroborated. The instructive cases of partially divided nerve collected by Mr. Swan, all tend to the same conclusion. In all, the symptoms were similar in kind, although they varied in degree; they were those obviously of excitement, as pain or convulsive movement, and commonly days elapsed, in one case even a fortnight, before the characteristic symptoms supervened. In one case dissection conclusively established the nature of the malady, for "the finger being amputated, a small fibril of the digital nerve was found divided; the end of this next the tip was incorporated with the cicatrix; the other was formed into a small bulb."

But the total division of a nerve by a clean incised wound may be also followed by inflammation, which in the form in which it commonly presents itself in stumps, is, according to Mr. Swan, chronic in its character; and this opinion is adopted by M. Descot. Such inflammation, according to Mr. Langstaff, generally arises from exposure of the cut extremity of the nerve either to atmospheric influence, or to contact with parts already in a state of inflammation, as during the healing process of stumps; and so confident is this eminent and original pathologist of the accuracy of the explanation, that he makes it the foundation of an important practical rule, of the propriety of which my information is too limited to entitle me even to form an opinion (although it seems reasonable), namely, that of drawing the nerves beyond the surface of the stump with a tenaculum, and removing a portion, generally equal to half an inch, when the extremity of the nerve will recede beyond the reach of atmospheric influence, or, perhaps, of the surrounding inflammatory process. Mr. Swan much commends this practice, and strongly advises it in all cases of painful stump requiring a second operation, whilst Mr. Langstaff restricts his recommendation of it to those cases in which a sufficient quantity of skin cannot be preserved, and in which, therefore, the ends of the nerves are likely to be included whilst the cicatrization is going on. It is an additional ground for commendation of this proceeding, that it does not appear to be very painful*.

Mr. Abernethy, as well as Mr. Swan and others, are of opinion that the exposure to air of denuded filaments is, in these cases, the cause of the inflammation. The impression of Bichat upon the subject was probably very similar. By experiments upon animals, he ascertained that "when a nerve was simply exposed, without denuding its medullary filaments, it was little sensible to the access of air, or to the agency of slight mechanical irritation; the membrane of each filament being, in such cases, a sort of protection to the medullary substance, which is peculiarly the seat of sensibility." "In these experiments," he adds, "it is easy to assure oneself of the little sensibility inherent in the enveloping membrane of each nervous filament. It is necessary to cross this membrane, and arrive at the medullary substance, to produce pain." Hence, reasoning *e converso*, it appears not unfair to conclude, that Bichat believed in the injurious effects of the exposure to atmospheric influence of the denuded medulla of nerves, and that amongst these pain would be a prominent symptom.

When this inflammation occurs in the nerves of a stump, it commonly produces a bulbous enlargement of their extremities. Meckel, indeed, asserts that all divided nerves have small bulbous tubercles near their extremity; but those which are the result of diseased action are of much lagrer size, and these, when influenced by compression or other mechanical violence—by atmospheric changes, or internal ailment—are apt to produce frequent and violent attacks of agonizing pains and excruciating spasms. When a student in the Borough, I witnessed a second amputation on account of this peculiar morbid condition. The united force of all the attendants was insufficient completely to control the struggling (apparently convulsive) of a child, not above thirteen years of age, when an attempt was made to steady the remnant of an arm by holding firmly the original stump. These bulbous enlargements of the extremity of a divided nerve have a peculiar character: "il est souvent si solide et si dur que le scalpel s'émousse en le coupant, et fait entendre un bruit semblable à celui que produiroit son action sur un cartilage *."

* Med.-Chir. Trans. vol. xvi. p. 144.

* Meckel's Manuel, vol. i. p. 283.

A nerve passing through a part which is the subject of inflammation, not unfrequently becomes implicated in the morbid condition of the surrounding textures; and this may happen whether the inflammation be simply phlegmonous, or specific in character. Professor Thomson remarks upon this subject, "in the neighbourhood of parts which had often been inflamed, I have observed that the nerves are sometimes more vascular and much thicker than usual *;" and M. Delpech assures us, that, in cancerous diseases, nerves are apt to become thickened, and to take on the particular character of that disease†. It is probably to this cause, the extension to the nerve of inflammation from a cancerous ulcer, or even in cases of common inflammation, that much of the pain may be owing. Blood, it is well known, may be collected in parts abundantly sensitive; there may be increased arterial action, accompanied with heat, as in blushing; nay, there may be actual inflammation of the cuticular tissue, as in erysipelas, and yet each of these states may be unaccompanied with suffering. But if phlegmonous inflammation attack the subcutaneous tissue, as in whitlow, the patient's sufferings, it is well known, are abundantly severe, and this because the disease implicates the very seat of the sentient extremities of the nerves. The pain of cancer, too, is very excruciating in a large numerical majority of instances; but I have recently witnessed the termination of a well-marked case of this disease in the breast, of a circular form, and not less than four inches in diameter, which it was my painful duty to watch for above twelve months, and in which, throughout the whole course of the malady to its fatal conclusion, the pain rarely exceeded that of any other ulcer of equal depth and superficial dimensions. The explanation of this is not perhaps easy. This individual, however, was, with the exception of her cancer, peculiarly healthy; and throughout the whole course of her malady there was little either of constitutional disturbance or surrounding thickening. No hardened lymphatics could be traced in the direction of the shoulder, and there were no enlarged glands in the axilla. Much also of the progress of the complaint was to be ascribed rather to the separation of minute sloughs than to what has been commonly called ulcerative absorption. These little sloughs probably destroyed the sentient organs as the disease proceeded; the nerves in the surrounding textures were little exposed to the extension to their trunks of inflammation, and the result was much less pain than usual. I offer this, however, only as a plausible and probable explanation of an unquestionable fact.

Mr. Swan, who has collected much valuable information upon this subject, considers that inflammation of nerves is commonly the result of the simple extension of disease from contiguous parts; and Descot confirms his opinion by adoption. "Nerves," he says, "are subject to inflammation, which takes place generally in those contiguous to inflamed parts. When a nerve partakes of the inflammation of the part in which it is situated, it becomes increased in size, from a deposit of coagulable lymph amongst its fibres." And again: "chronic inflammation of the nerves generally arises from a communication of diseased actions from surrounding parts, or sometimes from injuries *."

There is much confusion in the statements of even the best writers upon the subject of the symptoms of inflammation, when it is the result of extension of disease; and this has probably arisen from want of sufficient discrimination between the pain which arises from inflammation of the nerve and that from inflammation of contiguous textures; or between inflammation and its more remote consequences. Mr. Swan alleges that "it is generally attended by much pain, and a *paralysis, or imperfect sensation*, in the parts supplied by it;" thus imputing to the same morbid condition opposite effects, as "much pain, and imperfect sensation;"—and yet, in speaking of the chronic inflammation of the nerves in stumps, he adds, "when the nerves are in this state, the patient suffers so much pain, and *especially from the least touch*, as to be obliged to submit to a second amputation." At the first glance this may seem to be contradiction; but it is an apparent only, not a real contradiction. Both

* Lectures on Inflammation, p. 153.
† Diction. des Sciences Médicales, art. *Cancer*.

* On the Diseases of Nerves.

statements may be true, and admit of explanation. Where the continuity of a diseased nerve is perfect—where the nervous influence is not interrupted in its course, either by the destruction of the nerve itself or by the pressure of surrounding thickening—there is increased sensibility through its whole course. So, in many instances of neuralgia, the slightest touch of the part—a current of air, the movements of mastication, will constantly excite a paroxysm. There is morbid sensibility, with heat and increased secretion, in the remote distribution of the nerve; but in other cases when the nervous influence is intercepted by any cause, there may be pain referred to the part upon which the nerve is distributed, as occurs also in stumps, and yet there may be paralysis of the muscles, and defective sensibility to the touch upon the surface. Dr. Hennen seems to have been aware of this distinction, which he illustrates by cases of secondary paralysis after gun-shot wounds, without immediate injury to the nerve; "as in those cases when a ball has passed so close to a large one, or the plexus from which it proceeds, as to occasion an inflammation and consequent thickening of the neurilema, or investing membrane; or where, in a more distant transit of the ball, the tube formed by its passage swells to an extent sufficient to press on the nerve or plexus." In the case also of David Franklyn, related by Mr. Swan, there was great pain in the wrist and the palm of the hand, but the sense of touch in the thumb and three fingers was lost. The median nerve, where it passes under the annular ligament, was much enlarged, and *its natural connexion with the sheath* of the tendons of the flexor muscles of the fingers *thickened.* The cutaneous branches of the wrist and palm coming from an inflamed nerve, but escaping the pressure of contiguous parts, produced great pain; but the surrounding cellular connexion with the sheath and tendons compressed the digital nerves, and in conformity with what I have before advanced, strangled the nerves in their course, and impaired their function of ministering to natural sensibility.

[To be continued.]

ON THE INFANT MORTALITY IN LARGE TOWNS.

To the Editor of the Medical Gazette.

Sir,

In pursuing the inquiry, whether the mortality of infants is exclusively attributable to the prevalence of manufactures, I have turned to the several tables which are inserted in the second volume of Dr. Price's Treatise on Reversionary Payments or Annuities, and having arranged such of them in one view as furnish facts to the purpose, I subjoin the results, chiefly because the two first years of life are so variously expressed as to mislead an inquirer on cursory reference; 1 and 2 years, 0 and 1 year, and even 1 to 3 years, denoting the same period of life in various tables. These tables, and calculations on the modern Population Abstract, seem equally to prove that if misery is justly imputable according to the rate of infant mortality, all large towns are miserable abodes, whether they contain manufactures or not.

From Dr. Price. (Edition 1812.*)*

	Period of Observation.	Mortality in the Two First Years of Life.
London. Table ix.....	1728—1737	453 in 1000, say 45 per cent.
Table xiii.....	1759—1768	339 in 1000, say 34 .....
Table xvi.....	1771—1780	12018 in 28,452, say 42 .....
[London (Milne, p. 510)	1794—1811	7213 in 25,587, say 28 per cent.]
Norwich. Table viii...	1740—1769	460 in 1185, say 39 .....
Warrington. Table xli.	1773—1781	Males. 524 in 1273, say 41 ..... Females. 523 in 1427, say 37 .....

	Period of Observation.	Mortality in the Two First Years of Life.
Chester. Table xlii. ..	1772—1781	Males. 518 in 1927, say 27 per cent. Females. 549 in 2139, say 26 .....
Northampton. Tablexvii.	1735—1780	4367 in 11,650, say 37½ .....
Holy Cross, near Shrewsbury. Table xliii. ..	1750—1780	238 in 966, say 25 .....

Sweden. Table xliv.—p. 410	1755—1776	Males. 2850 in 10,000, say 28½ ..... Females. 2608 in 10,000, say 26 .....
Breslaw. Table v.	1717—1725	202 in 1000, say 20 .....
Vaud (Switzerland.)—Table i. p. 123	1756—1766	235 in 1000, say 23½ .....
Brandenburgh (a country parish.) Table ii. p. 124	1710—1759	282 in 1000, say 28 .....
Carlisle. From Milne, p. 564	1779—1787	2221 in 10,000, say 22 .....

On the foregoing table a few explanatory remarks seem to be requisite. In treating of the mortality of London in the years 1759-1768, Dr. Price adverts to the effect of considerable immigration into London, such as is noticed in your last number, p. 500, as operating a difference of 3 per cent. in calculating infant mortality in Lancashire; but he carries his assumption of facts so far as to represent (in his Table xv.) the true probability of mortality in the two first years of life at 68 per cent. instead of 34 per cent; in fact, he doubles the apparent mortality in every year from birth to fourteen years of age: thus precluding the possibility of comparing London with any other place in the known world. Dr. Price avows that he has made the same kind of addition (on assumed data) to the mortality of Vienna and Berlin (in his Tables iii. and iv.), wherefore they are omitted in the foregoing table.

The limits of the Bills of Mortality, under the title London, represented the metropolis with tolerable accuracy until the year 1780; since that time the accretion of suburbs in the parishes of Mary-le-bone, Pancras, Kensington, and Paddington, has required a larger definition of the metropolis; and in the Population Abstract (vol. iii. p. 494), the infant mortality appears to be 30 per cent. on males, 26 per cent. on females, little surpassing the average mortality of England and Wales. The health of London beyond many provincial towns in England is explained (p. 497 of the same volume), space having become more valuable for counting-houses and warehouses than for human habitation; so that the population of the once crowded part of the metropolis diminished one-half in the last century, and since 1801 has further diminished one-third.

The mortality of infants in the years 1813-1830, at various places, stands thus:—At Leeds and Nottingham, 37 per cent.; at Liverpool, 34½ per cent.; at Norwich, 33½ per cent.; at Birmingham, 33 per cent.; at Halifax, 31 per cent.; at Hull, 30½ per cent. It is supposed that Manchester would exhibit a large proportion of infant mortality; but this cannot be ascertained, because more than half the number of burials take place where the ages of the dead are not recorded; and all the other burials would produce a fallacious result, because they consist of the more opulent classes of the community.

Some of the agricultural counties of England, and the entire of Wales, give infant mortality of the two first years of life at 20 per cent., or one-fifth part.

I am, sir,
Your obedient servant,
J. Rickman.

January 27, 1835.

P.S.—The letter on the Mortality of Manufacturing Districts, in your last

number, is accurately printed, except that (page 589, line 30) 416 children should be said to spring from 100 marriages, not 104; and the computation is not unworthy of more distinct statement. The registered marriages average at 105,209 annually; add for the marriages among 25,000 Jews in England and Wales, 198; among as many Quakers, 198 marriages; for Scottish Border marriages, and a few omissions of registry, say 1000 annually; and all the marriages amount to 106,605. Deduct from the total births (page 589 of your last number) the illegitimate births (463,600 −20,039=443,561), and the result, divided by the above number of marriages, assigns 416 births to 100 marriages.

CASE OF DIABETES MELLITUS;

WITH REMARKS.

To the Editor of the Medical Gazette.

Sir,

Should the following case of diabetes mellitus, with remarks, be deemed sufficiently interesting and important, I have to request the insertion of it in an early number of your valuable journal.—I remain, sir,

Your obedient servant,

John Anderson,
Clinical Clerk.

Guy's Hospital, Jan. 27, 1835.

John M——, ætat. 52, a short, meagre-looking man, of pale complexion, very temperate habits, and by trade a cooper, was admitted into the clinical ward, November 27, 1834, under the care of Dr. Cholmeley. He stated that he had been ill twenty weeks, but had previously enjoyed tolerably good health; though, ever since a boy, he had been in the habit of making water oftener and in greater quantity than most persons. His first complaints were those of general weakness, insatiable thirst (often drinking off a quart or two of fluid at a time), and a more frequent desire to pass his urine, sometimes to the amount of five or six gallons in the course of the day. To this succeeded increased debility, wasting of the body, and a total loss of sexual power and desire; excessive dryness of the tongue, mouth, and fauces; a constant craving for drink; inordinate appetite; and a confined and costive state of the bowels. On the day of his admission, the most prominent symptoms were great emaciation, loss of power and muscular energy, impaired memory, extreme thirst and hunger, with a collection of tough mucus about the fauces; tongue clammy, and of a dirty white colour; skin dry and parched; no perspiration; a desire to pass water every half hour, which is of a pale straw colour and sweetish taste, diminished in quantity, though still much greater than natural, specific gravity 1·032; bowels very much confined; pulse 72, and feeble; occasional flatulent evacuations of an acid taste, and a peculiarly sweet smell of the breath. Gums not sore, or spongy; no phymosis or inflammation at the orifice of the urethra, and no tendency to œdema. Chest healthy; the resonance and the respiratory murmur being quite natural in every part.

℞ Hyd. Submur. gr. j. c. Pulv. Jacobi, gr. iij. 6tis horis. Enema Saponis statim. Drink, Milk and Water, O. iv. Food, Beef Steak, ℔iss.; no bread, or vegetables.

28th, morning.—Passed water seven or eight times in the night; bowels scantily moved; urine 15 oz., specific gravity, 1·032; pulse 84, fuller.

℞ Haust. Sennæ st. et pergat.

29th, morning.—Had a restless night, being disturbed six or seven times to make water. Mouth and tongue dry; thirst excessive; had slight vomiting; bowels opened twice copiously; pulse 90.

℞ Magn. Ust. 3ss. 6tis horis. ex jul. Menthæ, ℥jss. Pergat Pil. bis in die.

30th, morning.—No sleep; tongue dirty and clammy; mouth not so dry, and thirst less; skin dry; sickness and eructations relieved by the medicine; pulse 98, compressible; urine 88 oz., specific gravity 1·035. There is an eruption over the chest and back, and some pediculi, which occasion great itching.

Inf. Ung. Picis Sulph. bis in die. H. Sennæ st. Pergat Mistura et Pil. c. Pulv. Opii, gr. j. h. s.

December 2d, morning.—Slept better; thirst and appetite less; mouth dry; no perspiration; bowels open; urine 128 oz., specific gravity 1·035; pulse 76, strong; itching relieved.

Augeatur dosis Pulv. Opii, ad gr. ij. h. s. et Pergat Pil. et Mist.

℞ Ol. Ricini, ℥vj. cras mane.

3d, morning. — No sleep; passed water seven or eight times in the night; tongue dry; bowels not open; complains of pain in the chest; respiration healthy; urine increased; pulse 76.

℞ Mist. Magn. c. Magn. Sulph. ℥iss. 2dis horis, ad sedes: et Pt. Admov. Emp. Canthar. Thoraci.

4th, morning.—Feels generally better; bowels well opened; urine 84 oz. Pain relieved by the blister.

Augeatur dosis Pulv. Opii, ad gr. iij. h. s. P. Pil. bis die et M. Magn. 6tis horis ut antea.

5th, morning.—Disturbed only three or four times in the night to pass water; thirst less; urine 70 oz.; pulse 66; no pain in the chest; no headache.

Aug. dosis P. Opii ad gr. iv. h. s. et P.

6th, morning.—Appetite increasing; feels weak; bowels well opened; urine 82 oz., specific gravity 1·035; no pain in the head; pulse 66, compressible.

Aug. dosis P. Opii ad gr. v. h. s. et Pergat.

7th, morning.—Continues much the same; had several copious solid motions.

Aug. dosis P. Opii ad gr. vi. h. s. et Pergat.

8th, morning.—Had a good night; no headache or giddiness; thirst and appetite the same; urine 62 oz., specific gravity 1·035.

Aug. dosis P. Opii ad gr. vij. h. s. et Pergat.

9th, morning.—Head light and rather giddy; thirst increased; no perspiration; bowels open; dejections of a light chocolate colour; urine 140 oz.; pulse 66, not feeble.

℞ Pulv. Opii, gr. vj. h. s. et Pergat. Ordered Tea, O. iiss. The quantity of fluid taken each day is now 104 oz.

10th, morning. — No head-ache; bowels open; urine higher coloured, depositing a white flaky sediment, 40 oz., specific gravity, 1·035.

Pergat.

11th, morning.—Thirst less; tongue and lips moister; urine 59 oz.

Pergat.

12th, morning.—Appetite increased; bowels open; dejections of a light colour; urine 60 oz., specific gravity 1·038.

Omit. Pil. mane et Pergat.

13th, morning. — Mouth moister; thirst less; skin dry; urine 72 oz. rather higher coloured, smell not so sweet.

Aug. dosis P. Opii ad gr. viss. et Pergat.

14th, Morning.—Bowels opened copiously; dejections of a light colour; urine 80 oz., specific gravity 1·035; gums not tender; feels chilly.

Pergat.

15th, morning. — Thirst increased; appetite craving; skin dry; bowels open; urine 180 oz.; pulse 64.

Pergat. Ordered 2 bottles of Soda Water, amounting to about 18 oz. of fluid, and increasing the amount of liquid to 122 oz. per day.

16th, morning.— Thirst increasing; tongue very dry; dejections copious, and rather dark coloured; urine 84 oz, specific gravity 1·040.

Pergat. Mist. ter die et Pulv. Opii, gr. viss. h. s. ut antea præscrip. Omit. Pilula vespere.

17th, morning.—Bowels opened copiously; urine 150 oz., specific gravity 1·037; thirst diminished.

Pergat. Ordered one bottle only of Soda Water, making the amount of fluid 113 oz.

19th, morning.—Skin very irritable and dry. There is an eruption over some parts of the body.

Pergat. Habeat Balneum Calidum cras.

21st, morning.—Passed a good night. Perspired profusely for four hours after coming out of the bath; tongue moister; thirst less; appetite craving; itching better; bowels open; urine 90 oz., specific gravity 1·038; pulse 66.

Pergat. Omit. Soda Water. Lac. e. Sævo. ℈j. making the amount of fluid taken 120 oz.

23d, morning.—Tongue much moister; thirst greatly diminished; dejections solid, and clay-coloured; urine less sweet in taste, 75 oz., specific gravity 1·025. General health better; had a slight return of sexual desire, for the first time since his illness.

Pergat. Habeat Balneum Calidum st.

24th, morning.—Tongue moist; thirst quite gone; no desire for drink; appetite great; perspired profusely from the effect of the warm bath; urine 102 oz., specific gravity 1·025.

Pergat.

25th, morning. — Tongue a little clammy, and thirst increased; perspiration only slight; had six solid copious de-

jections; urine 142 oz., specific gravity 1·036.—Pergat.

26th, morning.—Thirst very much complained of; perspiration very slight; urine 200 oz.; pulse 72.

Aug. dosis P. Opii ad gr. vij. h. s. et Pergat.

27th, morning.—Continues much the same; urine 112 oz., specific gravity 1·040.

Infricetur Ung. Sulph. bis die, et Pergat.

28th, morning.—Urine 92 oz., specific gravity 1·039.—Pergat.

29th, morning.—Urine 114 oz., specific gravity 1·035.—Pergat.

30th, morning.—Urine 100 oz., specific gravity 1·035.—Pergat.

31st, morning.—Has continued improving a little; perspiration gradually returning more profusely; tongue moister and thirst less. Had two solid dejections; urine 93 oz., specific gravity 1·033.—Pergat.

1835, January 1st, morning.—Urine 96 oz., specific gravity 1·036.—Pergat.

2d, morning.—Urine 105 oz., specific gravity 1·036.—Pergat.

3d, morning.—Urine 92 oz., specific gravity 1·036.—Pergat.

4th, morning.—Urine 100 oz., specific gravity 1·030.—Pergat.

5th, morning.—Urine 100 oz., specific gravity 1·030.—Pergat.

6th, morning.—Has continued almost free from thirst up to the present time; the tongue has been uniformly moister; the perspiration has continued increasing, and is to-day very profuse; the dejections have been of the same solid heavy character and light colour; pulse 64, rather feeble.—Pergat.

Dr. Cholmeley's term having expired, the patient came under the care of Dr. Bright, who felt inclined to try again the effects of the warm bath.

7th, morning.—Urine 102 oz., specific gravity 1·035.—Pergat.

8th, morning.—Urine 80 oz., specific gravity 1·035.

Habeat Balneum Calidum, et Pergat.

9th, morning.—Tongue and lips moister; has perspired profusely; thirst less; pulse 70; urine 92 oz., specific gravity 1·027; had slight return of sexual desire.

Pergat. Food, mutton chop in addition.

10th, morning.—Expresses himself as feeling stronger; appearance of body not so emaciated; countenance improved; perspiration moderate; urine 118 oz., specific gravity 1·026.

Habeat Balneum Calidum et Pergat.

11th, morning.—Tongue slightly rough, but moist; thirst scarcely at all complained of; appetite satisfied; bowels open, dejections solid, heavy, and light coloured; urine 152 oz., specific gravity 1·033; slight increase of virility.

Aug. dosis P. Opii ad gr. viij. h. s. et Pergat.

12th, morning.—Tongue clammy and not so moist; thirst greater; perspiration slight; bowels rather confined; urine 132 oz., specific gravity 1·034.

℞ Pulv. Rhei. c. Cal. ℈j. statim, et Pergat.

13th, morning.—Tongue moister, and thirst less; appetite satisfied; perspiration moderate; bowels open once, dejection hard and lumpy; urine 132 oz., specific gravity 1·036.

Habeat Balneum Calidum, et Pergat.

14th, morning.—Thirst and appetite the same; bowels open twice, dejections hard and lumpy, and slightly stained with blood; urine 150 oz., specific gravity 1·034; pulse 68, compressible.

℞ Sulph. Lot. ʒss. ter die. Loco Ung. Pergat.

15th, morning.—Thirst and appetite continue satiated; urine 130 oz., specific gravity 1·035.—Pergat.

16th, morning.—Had some profuse perspiration; tongue moist; no thirst; bowels open three times, dejections solid and heavy; urine 132 oz., specific gravity 1·037; sexual desire increased; general health and strength much improved.

In the evening I discovered that he had been exchanging half his meat for some bread with a neighbouring patient, since 9th instant; in consequence of which disclosure he abruptly left the hospital.

Remarks.—The above case shews that much may be done to lessen the intensity of the disease and mitigate the sufferings of the patient, though an entire and permanent cure is seldom attainable. With regard to food, a strict animal regimen, and total abstinence from all vegetable diet, or any thing of a saccharine tendency, seems

he most desirable plan; difficult often o pursue, from the loathing of the pa- ient, who requires to be strictly watched. In this instance, however, I am quite convinced that animal diet solely was strictly adhered to, and that no bread was taken until the last seven or eight days. Opium is allowed to exert a decided influence over this disease; pro- bably by checking the secretion from the kidney, and altering the character of the urine, increasing the lithic acid and urea, and lessening the sugar. Its first effect, however, according to Dr. Prout, is to increase the specific gravity, this evidently depending on the greater concentration of the urine caused by its being diminished in quantity. As the remedy is persevered in, the original specific gravity returns, and even be- comes less. It is astonishing the quan- tity of opium that can be borne: Dr. Cholmeley has increased the dose from a single grain up to 14 grains every night: 21 grains at bed-time have been given at this hospital; and a case is re- corded by Dr. Elliotson, in which 45 grains were taken three times a-day. In the present instance, a dose above 7½ grains produced headache and giddi- ness, and could not be borne; this, how- ever, appeared to have some effect in diminishing the quantity of urine, though not much influence on its spe- cific gravity. It is singular that it had no effect in constipating the bowels; the dejections were always very copious. When this disease has existed for some little time, may not the opium act by diminishing the irritability of the kid- ney caused by the increased demand on its functional power? and may it not alleviate the constitutional symptoms by diminishing the general irritation and want of power consequent upon the loss of so much solid matter, and the circu- lation of unhealthy blood? May it not act also by determining to the skin and promoting perspiration—a secretion so desirable in diabetes?

Magnesia has been found of great service, by correcting the acidity of the stomach which is generally prevalent in this disease; also by allaying the sick- ness, diminishing the thirst, and lessen- ing the frequency of the eructations. In this instance it had a two-fold effect: it diminished the symptoms just enume- rated, and regulated the state of the bowels.

Sulphur possesses the property of pro- moting the secretions and excretions of the body; and when taken up into the system, is very likely to excite perspira- tion. There is little doubt but that in the present case it assisted the other remedies in promoting this desirable secretion.

Repeated bleedings in small quanti- ties have been recommended and pur- sued by several persons with various de- grees of success; but as a general plan of treatment, it is open to many ob- jections.

I was induced to request the trial of the warm bath (a vapour bath not being convenient), from reading an account of some cases related by Dr. Lefevre, and Dr. Wilson in reply, in Nos. 365 and 368 of the Medical Gazette, and suc- cessfully treated by the vapour bath. Its efficacy appears to depend entirely on its power of promoting perspira- tion; and as this function of the skin is generally, if not always, suspended in this disease, its re-establishment would seem to indicate a good method of cure. On referring to the daily reports of the case, it will be seen that up to the trial of the bath the skin had been irritable, dry, and parched, the thirst excessive, the tongue dry and clammy; but these symptoms were very much mitigated by the profuse perspiration which followed the use of the bath; it did not appear, however, to have any marked effect upon the quantity of urine. This re- medy was not persevered in sufficiently long to come to any conclusion as to the results of its effects; and in the latter trial of it, the bread taken was, I think, sufficient to account for the high specific gravity and increased flow of urine *; whilst the free secretion from the skin, together with the other remedies, very much alleviated the constitutional symptoms.

The dejections were of a singular ap- pearance, and very characteristic of the disease; at one time they were soft, and of the colour of Roman cement; at another, of a very fine light colour, con- taining but little bile, and either in heavy solid compact masses, or in hard detached portions, resembling more the excrement of the horse than human fæces.

* A single piece of bread or biscuit has been known to increase the specific gravity eight or ten degrees.

The urine, though it often exceeded in quantity the amount of fluid taken, yet was never very abundant. Different cases are recorded, in which 30, 40, and even 52 pints, have been passed in the 24 hours. These are rare: the most usual amount is from 6 to 20 pints: occasionally not more than the natural quantity is passed. In this case, the highest measure of urine was 200 oz. (and that only once); the lowest 40 oz.; the average 100 oz. It was uniformly of a pale straw colour, occasionally with a white flaky sediment, sweet smell and taste; it was neither coagulable, nor even rendered opalescent by heat or nitric acid, as it is said to be sometimes towards the close of the disease, and the supervention of hectic fever, though on the other hand it is asserted that the appearance of albumen is the indication of a favourable change. The specific gravity varied, the highest being 1·040; the lowest 1·025; the average 1·035: the quantity of solid contents, therefore, passed daily, upon the average, was 5583 grains, or rather more than 11½ oz., according to Dr. Henry's table, which is very exact, and very useful for determining, in a given quantity of urine, of a known specific gravity, the solid matter it contains. I regret that I am not able to subjoin an analysis of the urine and perspiration; I was about to collect some of the latter when the patient so abruptly left the hospital. As to the general chemical characters of diabetic urine, there appears to be but a small quantity of lithic acid and of the usual salts; a great deficiency of urea, and an excess of saccharine matter; said by some to be abundant in proportion as the former is deficient.

The pathology of diabetes is very obscure, but future and more minute investigations may probably refer it more particularly to the kidney, though this organ may not be considered as the original seat of the disease. We know that the kidney need not necessarily be disorganized, to secrete albuminous urine, but merely disordered in function. Why may not, then, this latter cause operate in secreting saccharine urine, the material for the formation of the sugar being in the urea, which is present in the blood, and is nearly deficient in diabetic urine; and the elements of which urea being differently arranged, give rise to the formation of sugar? It is but fair to state (as partly opposing this), that a large quantity of urea has been found, though very rarely, in diabetic urine; however, the chemical relation between the urea and sugar* would seem to favour the former hypothesis, as also a case which is recorded by Dr. Bostock, in which the solid matter of the urine at first consisted only of urea, but afterwards became converted into saccharine matter. The experiments of several eminent chemists have not yet detected sugar in the blood, nor any where else than in the urine—a fact considered by some very much against the theory of considering a derangement of the general system as a cause of diabetes. But as the formation of urea is proved by Prévost and Dumas (and more recently by Gmelin and Tiedemann†), to be commenced in the blood, these experiments are by no means conclusive. May not, therefore, the primary source of the disease be in a disordered state of the assimilatory functions, by which an undue quantity of urea is formed; and that the conversion of this urea into sugar depends on disordered action of the kidney? There appears to be a partial analogy in the pathology of the albuminous and saccharine secretions; and as we know and prove that the kidney is deranged in the former instance, why may it not be so in the latter? But we have no evidence of this after death, for we should expect that long-continued functional derangement would produce equally in both cases disorganization; and yet no morbid appearance corroborative of this has as yet been discovered, but merely a hard, or soft, or hypertrophied state of kidney; just as we should expect to find from the long-continued irritation of that organ. It is just possible that there yet remains to be discovered some morbid appearance—some unnatural state of kidney, that has hitherto eluded the search of the most vigilant pathologist.

This disease often runs on for a considerable time, and at length terminates by exhaustion, or by the supervention of phthisis, or some other disease; sometimes the patient is suddenly cut off by apoplexy.

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* These two substances contain exactly the same proportions of hydrogen, but sugar contains twice as much oxygen and carbon as urea.

† See Med. Gaz. for Jan. 24, p. 605.

ON THE

PATHOLOGY OF THE SECOND STAGE OF FEVER.

To the Editor of the Medical Gazette.

SIR,

THE various theories which have been urged regarding the proximate cause of fever, from the time of Hippocrates to the present period, and the modifications of exploded hypotheses which in later times have been revived, evince the very small progress which has been made towards elucidating the real nature of the *occult causes* of this disease. The doctrine of Cullen, for example, is a mere version of the Themisonian theory, which, as we learn from Celsus, regarded fevers as originating from a too rigid state of the solids. Hoffman, again, supposed that the proximate cause of fever arose from an universal spasm of the fibrous and nervous system; and this was the prevailing theory until lately, when the slumbering ghost of the humoral pathology has been again invoked. Dr. Fordyce, however, has remarked, that "what the real derangement of the system is which produces the external appearances in fevers, is not at all known; it is a disease the essence of which is not understood." Lieutaud also observes, "In Cimmeriis latet tenebris genuina febris indoles; nec forte dilucidius patent ejus differentiæ;" and many other celebrated pathologists have recorded a similar testimony. Quitting, then, such unsatisfactory and disputed ground, I wish to draw attention to facts which are more apparent.

The first stage of idiopathic fever, as it is presented to our view, is essentially a state of *depression*. The vascular system is paralysed; the heart grows sluggish; the skin cold; shiverings occur, with fulness and a sense of oppression at the præcordia; urine flows in small quantity, and all the secretions are more or less suspended, and thrown into the mass of the circulating current.

The *second* stage has been termed that of *re-action*, a word of vague and indefinite import, and, like many other expressions in medicine and science, coined to afford a convenient shelter for an unexplained mystery. It is well known that the urine and perspiration contain a large proportion of saline ingredients. In following up the experiments of Dr. Stevens, I immersed a clot of venous blood in a vessel of fresh-drawn urine, and the result was such as I had anticipated: the surface of the clot became *completely arterialized*—as completely, but somewhat by a slower progress, as that which had been submersed in a solution of nitre, or of common salt. Here, then, we arrive at something like a knowledge of the nature of the second stage of fever. The elements of the secretions, not being removed by the various emunctories from the body, accumulate in the blood, which consequently becomes surcharged and poisoned with the saline and excrementitious matter of the perspiration—the urine and the bile. The vascular system is stimulated to violent and undue exertion; the pulse throbs; respiration is accelerated; increased animal heat engendered; the vital current is in a state of *hyper-oxygenation*, and delicate organs which maintained a predisposition become the seat of local injuries; and it is not until the various functions of the system begin to assume a healthy state—until the secretions are eliminated from the blood, and the urine flows, and the perspiration returns—that these phenomena cease, or that we look with confidence for the period of convalescence.

I am, sir,
Your obedient servant,
R. H. ALLNATT, M.D.

Wallingford, Jan. 30, 1835.

SODA A REMEDY FOR TOOTH-ACHE.

To the Editor of the Medical Gazette.

SIR,

HAVING found the alkalies to possess singular power in relieving tooth-ache, I beg you will have the goodness to give this a corner in your extensively-diffused journal, that many sleepless nights may be avoided.

The most pleasant and agreeable, soda, will either immediately or in a few minutes cause the entire cessation of pain, by carefully filling the decayed tooth with the powdered carbonate, so that it may descend to the nerve, which its solution in the saliva will soon after allow it to do. I am not aware that

this will permanently cure, although it will effectually relieve the sufferer, and for many hours; and it does not seem to lose its efficacy by frequency of application. It cannot be expected to be useful where pain has arisen from the formation of matter. A strip of litmus paper, put into a decayed tooth, will at once explain the rationale of its action, and why pain so removed may recur.

I have the honour to be, sir,
Your obedient servant,
JOHN S. GASKOIN.

32, Clarges-Street,
Jan. 30, 1835.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

Ueber die Anlegung und Einrichtung von Irren-Heilanstalten, mit ausführlicher Darstellung der Irren-Heilanstalt zu Siegburg. Von DR. MAXIMILIAN JACOBI. Berlin, 1834. Schloss.

(On the Structure and Arrangement of Lunatic Asylums, with a full account of the establishment at Siegburg.)

WE have examined this volume with some attention, and think it cannot but be very acceptable to all who take an interest in the treatment of the insane. In this country we have numerous establishments for the reception of such patients; but there is nothing systematic in our plans, and we believe opinions are much divided among us as to the best forms and methods of arrangement to be adopted in erecting new asylums, and in reforming old ones. The experience of Dr. Jacobi here offers its assistance; and the present work, coming from a person of so high a reputation, must command both respect and gratitude.

The first of the two parts into which the work is divided treats of principles and generalities; it discusses several important questions touching the objects and advantages of special institutions for the management of the unsound of mind. The author's opinions, on the whole, are favourable to large establishments, in contradistinction to houses set apart for the reception of a small number of patients; yet 200, he thinks, ought to be the limit of those collected into any one locality. It is to be observed, that Dr. Jacobi does not countenance the reception of *incurables;* moreover, when he has no hope of a patient's recovery, he sends him away. Among those of the latter class he ranks such as have become mad from lesions of the brain, or from morbid changes in the tissues within the skull; confirmed idiots, or persons affected with dementia and idiocy in consequence of apoplexy, or in combination with paralysis, or where mania comes on after acute or chronic encephalitis.

We cannot enter into the details of the sort of structure which Dr. Jacobi thinks best adapted for an asylum: suffice it that it must be simple and cheerful; neither like a castle nor a monastery, nor in anywise calculated to overawe the inmates. The church, the baths, the kitchen, the wash-houses, and other offices, he would have arranged in the central part of the building. Here also the chief overseer and resident physician should have their abode; but the other *employés* should be beyond the wings or main body of the establishment.

Supposing 200 to be the number of patients, Dr. Jacobi thinks they might best be divided into five classes—1, of those who are dangerous and outrageous; 2, the noisy and troublesome; 3, those labouring under idiocy and dementia; 4, the melancholic and hypochondriacal, requiring special care, as being apt to commit suicide; and the 5th and last division, comprehending by far the largest portion of the patients—namely, the tranquil and orderly—should have abundant accommodation. It is worthy of notice, that the author does not approve of having the convalescents separate from the other people in the house: their being permitted to go amongst the latter he thinks is attended with auspicious circumstances, conducing as well to their own recovery as that of others.

In the chapters on treatment we find much excellent matter, relating first to the corporeal and mental exercises suited to lunatic patients; then to the medical management; next noticing the coercion which is occasionally required; and lastly, the diet and regimen of the insane.

The second part of the work is practical and descriptive: it gives abundance

of information relative to the establishment at Siegburg; but for particulars we must refer those interested in the detail to the work itself. Meantime we have much pleasure in laying before our readers an account of the admirable working of Jacobi's system, as given by a gentleman who recently visited the Siegburg asylum.

"Nature has peculiarly favoured the locality of Siegburg, the site of which is far preferable to that of any asylum which I have visited, either in my own or foreign countries. The insulated rock, on which stands the Irrenanstalt, rises abruptly from the plain, and commands a rich and romantic view, bounded towards the south by the peaks of the *sieben gebirge*,—towards the north by undulations over which the towers of Cologne are just discernible,—on the east by a chain of low wooded hills,—whilst, towards the west, the eye is attracted to the wide expanse of Rhine, which flows so majestically amidst gardens and vineyards, spired villages, and ruined castles. At the foot of the rock stands the old town of Siegburg, whose crumbling ramparts are bathed by the Sieg, a mountain torrent that, after meandering a couple of leagues, precipitates itself into the Rhine. In the eleventh century, the mountain, or rather craggy hill, of Siegburg was crowned by a castle belonging to the Count Palatine Henry, who presented it to the Archbishop Annon. The latter established there a Benedictine monastery, erecting for this purpose a vast and stately edifice. Napoleon, who every where appropriated monastic properties to the purposes of the state, expelled the humble Benedictines from their splendid residence; and after the peace, the Prussian government having failed in finding a purchaser, the building was, by a few additions and alterations, converted into an Irrenanstalt, or asylum for the insane of the Rhenish provinces. Nothing can be better adapted to such an institution than the long corridors and separate cells which form the interior of a monastery. The edifice is nearly quadrangular, but its great central court is divided by a noble church, which towers above the rest of the structure. On three sides the ground-floor is almost entirely occupied by the kitchen, baths, and offices. The cells of the first floor are principally devoted to the poor patients, whilst those of the second are inhabited by the *pensionnaires*, or persons of a higher class, who are admitted on terms proportioned to the accommodation which they require. The fourth side of the quadrangle, which offers the advantage of being a little separated from the others, has for its inmates the more restless or noisy patients of all classes, the ground-floor being assigned to the men, and that above to the women. At present there are about two hundred patients, of which only eighty are females.

"There is one peculiarity in the moral treatment adopted in this institution, which is especially worthy of notice—the employment of labours, either mental or bodily, as a remedial measure. With this view, a distinction is made as to the habits and relative education of the patients. Of the poorer inmates, the males are, with but few exceptions, employed six hours every day in the cultivation of the gardens and fields which surround the hill; whilst the females either spin or are actively engaged in the domestic arrangements. In their leisure hours, those who are recovering meet in rooms set apart for society, in which mechanical games, the journals, and works of a light and instructive character, are introduced for their amusement. The *pensionnaries*, in general persons of good education, are also called into activity—the ladies to exercise themselves in needlework, reading, or music—the gentlemen to pursue literary or arithmetical studies proportioned to their abilities, and adapted to the peculiarities of their cases. The occupations of both are carefully superintended by well-informed persons of both sexes, the literary exercises being more particularly revised and corrected by the Protestant and Catholic clergymen of the establishment. One gentleman, whom I visited, was translating Cæsar's Commentaries; a second learning a new piece of music; and a third, observing that I was a foreigner, conversed with me in Latin. The private apartments of the *pensionnaires* are supplied with every necessary comfort, and the courts and gardens afford ample space for recreation and exercise. There is a library, and in the public rooms billiards, and various kinds of games and musical instruments, serve to while away the few hours which are not expressly devoted either to bodily exercise or to study. Idleness is banished, and with it much of the melancholy which is so usually observable among the insane: order, neatness, and industry, reign in every branch of this interesting establishment, the arrangements of which reflect infinite credit on its learned and scientific director, Dr. Jacobi *."

We should add, that Dr. Jacobi's volume is very handsomely got up: there are fifteen illustrative lithographs accompanying the text—two of them presenting views of Siegburg, with its lofty and imposing scenery; the re-

* Letter of Alfred Waine, Esq., dated Bonn; see the *Athenæum*, Jan. 24, 1835.

mainder consist of sketches and plans of the most celebrated asylums in different parts of Europe.

An Inquiry into the Nature of Sleep and Death, &c. &c. By A. P. W. Philip, M.D. F.R.S. L. & E. &c.

[Second Notice.]

In our former notice of this work, we were prevented by want of space from completing the subject;—the passages which we now subjoin are those to which we then alluded.

Cause of the Growth of the Body.

"Although the sleep of each day restores the sensitive system from the exhaustion which causes it, the daily recurrence of the exhaustion has the effect of permanently lessening the excitability of that system; a change not to be perceived from day to day, but which, from many phenomena, becomes sensible in the course of years. As the sensitive system becomes less excitable as the day advances than on first awaking, in like manner it becomes less excitable as life advances than in childhood; and in like manner, as the repeated excitement of the sensitive system tends to the final decay of its sensibility, the continued excitement of the vital system, as we might *à priori* have supposed, has a similar tendency with respect to the excitability of this system. We find the pulse becoming slower as we advance in life, in consequence of the lessened excitability of the heart and bloodvessels, and the vital organs less readily influenced by the parts of the nervous system associated with them, proving that their functions are also under the process of decay. On these parts and the powers of circulation all the assimilating processes depend; and the shrinking frames of the aged indicate their weakened state, and the approach of their final extinction; for those were deceived who taught that there is nothing in the laws of our frame which should lead us to believe that it is not formed to last for ever.

"The greatest degree of excitability, either in the sensitive or vital system, is not that which produces the most vigorous state of health. We may be too excitable as well as too little so. Many of the more serious diseases of children arise from this cause. The derangement of the digestive organs, which in the adult produces the nervous irritations of indigestion, produces in the infant inflammation of, and effusion on, the brain. The irritation of the gums, which produces pain and restlessness in the former, in the latter produces convulsions and death. Thus it is that the habit of the child is less firm and vigorous than that of the adult, which has acquired steadiness by the diminution of its excitability in consequence of the continued action of the stimulants of life; but, after a certain period, the fault is a deficiency, not a redundance, of excitability, a defect apparently the necessary consequence of the laws of our frame, and to which every day unavoidably adds.

"The redundance of excitability in children, the cause of many evils, we may be assured answers some important end. There is reason to believe that it is on it that the growth of the body depends, and that the due proportion between the excitability and the stimulants of life, by the gradual diminution of the former, determines the period at which the growth is completed in each individual. While the excitability continues redundant, the ordinary stimulants of life necessarily support a greater activity of the functions than is required for the mere maintenance of the body, and thus its volume enlarges, on the same principle that we have just seen it shrinks in the aged, in consequence of their excitability having become defective. It seems to be on this principle, namely, by a premature exhaustion of the excitability, that the hardships of life, (that is, the greater than usual application of its stimulants,) check the growth. On the same principle we should expect to find that the growth would cease soonest in the most excitable habits, because in them the excitability will soonest be reduced to a due balance with the stimulants of life. Thus it seems to be that the growth of women, who are more excitable than men, generally stops sooner, and consequently that they are of shorter stature, large women, for the most part, having less of the habit peculiar to their sex; and that by far the greater number of the most excitable men, who, in consequence of this constitution, make the greatest figure in their day, are men of short stature, while giants are generally of an opposite habit of body. There must, of course, to such rules be many exceptions. Where so many causes are operating, no result can be uniform."

In our account of the Treatise before us, we stated that the opinion of the identity of the nervous influence and voltaic electricity receives much support from Dr. Faraday's doctrine of Electro-Chemical Equivalents, the necessary inference from which being that all chemical changes depend on electric action. Dr. Philip enters at length into the nature of the functions of the animal body in his paper on Death, to which we must refer the reader, the passages being too long for quotation. The following are the concluding paragraphs:—

"While the results of these experiments remain undisputed, if we assert that the nervous influence is a vital power, we must allow that such a power may exist in a mechanism wholly different from that to which it belongs in the living animal, and that all the functions of a living power may be performed by an agent which operates in inanimate nature; positions, which I believe no man, acquainted with the laws of the living animal, will be hardy enough to maintain."

* * * * *

"Life, without much violence done to language, has been called a forced state. It consists of exeitable parts called into action by suitable stimulants. These stimulants, it appears from what has been said, are all of an inanimate nature, for although the sensorial can only be excited through the nervous system, the action of the former, it is evident, equally, though not so immediately, depends on the agents which excite the latter. Hence the harmony which exists between the living powers of the animal body and the powers of inanimate nature. There is nothing in common in the nature of these powers; but the organs of the former, being composed of the same materials with the world which surrounds us, can be exeited by no means but the agents which operate in that world; and on what prineiple could we expect any other result?

"These organs themselves are a part of inanimate nature. Deprived of their vital powers, they may still, as far as we see, be perfect in all their parts. On what their vital powers depend, we know not. In the study of these powers, and the relation they bear to the other powers of nature, we must be satisfied to take the facts as we find them. And what other knowledge have we of the inanimate powers themselves? Do we know more of the nature of gravitation or electrieity than of life? It is the properties, not the essences, of things which are the objects of our senses. Our nature must be changed before the latter can be made a subject of inquiry. Life is a certain train of phenomena, depending on the peculiar state of its organs produced by the action of the same agents, which operate in other parts of nature, on the material organs of our frame. We may range these phenomena in the way that best assists the memory, and best shews their relation to each other and the other phenomena of nature; but no task can be more hopeless than the attempt to proceed one step further, either with respect to the living powers or any other principle of action. Such an attempt is beyond, not merely the limits, but the nature of our minds. It is the blind attempting a knowledge of eolours.

"When we say we understand any of the phenomena of nature, we only mean that we are able to class them with other similar phenomena. We say that we know why a stone falls to the ground, because we class its fall with the other phenomena of gravitation. With regard to the phenomena of animal life, we at once see the limit of our inquiries, because it is self-evident that these phenomena exist no where but in the living animal, and consequently that there is no more general principle to which they ean be referred—a position so evident that is difficult to understand how it could ever have been overlooked.

"It is eustomary to speak of life as a subject of peculiar mystery. But if what has just been said be correct, we have precisely the same means of acquaintance with it as with the other powers of nature. Its phenomena are as open to observation and experiment as the phenomena of any of these powers; and we possess no information respecting any of them but such as is derived from those sources. The greater appearance of mystery arises, not from the greater obscurity of the nature of life, but from its phenomena bearing less analogy to those of the other powers of nature than these bear to each other; in eonsequence of which the former are less familiar objects of contemplation. Simple as such observations are, they cannot be regarded as superfluous, when we see them overlooked by such writers as Hartley, Hunter, and others of almost equal name.

"We eannot be surprised that the inanimate agents, which are incapable of any change that unfits them for their office, should at length effect a permanent change in the vital parts on which they operate of all parts of nature the most changeable. Hence the death of old age.

"The sensorial functions we have seen fail first, because their organs are removed from the immediate action of the inanimate agents which still excite the organs to which they are directly applied; but for the same reason, it is in the latter, the organs of the nervous and muscular system, that the decay begins. Their powers are gradually impaired by the operation of the inanimate agents which excite them, and the sensorial powers, as appears from all the phenomena of our decay, only fail in consequence of their failure; but as a certain vigour is necessary to render the latter capable of maintaining the sensorial functions, these necessarily cease before the total extinction of those which maintain them."

MEDICAL GAZETTE.

Saturday, February 7, 1835.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

PROPOSED CHANGES IN THE COLLEGE OF PHYSICIANS.

THE reforms which we lately stated were about to be made in the Inns of Court, and in the College of Physicians, are already in progress. The lawyers have taken the lead, and promulgated their plan of putting the dissenters on a footing with the students from the Universities. The additional two years heretofore demanded of the former are to be dispensed with, while the preliminary step of making a deposit of 100*l*., from which the University-man has until now been exempt, is hereafter to be required of him. This, we suppose, may be taken as illustrating the meaning of the terms "levelling upwards" and "levelling downwards," which have made such strange confusion in some men's minds;—taking something from the one and adding something to the other: thus the dissenter is levelled *downwards*, *quoad* time, and the University man *upwards*, *quoad* money; and so the parties are brought to the same elevation.

The Physicians have more to do: with them the levelling process is by no means so simple. They did not content themselves with exacting an additional period of study or probation from those not educated at the Universities—but they required a degree in medicine; and thus, though placed by their charter in possession of independent powers, they voluntarily consented to become subordinate to, or at least dependent upon, the Universities. While the Surgeons have regulated the studies of those desirous of becoming members of *their* "College," and the Apothecaries have appointed the course of study to be pursued by those seeking admission into *their* "Society." And while they have each severally improved the standard of acquirement, and raised the grade of their order, the Physicians alone have remained unmoved observers of the progress of society and of the signs of the times. But we do them wrong: they have indeed been reluctant to change, and jealous of innovation; they have been slow to stir, but being moved at length, let us hope that, as with respect to other heavy bodies, if the *vis inertiæ* be great, the impetus is proportionally strong when this has been fairly overcome.

The College of Physicians, first in nominal rank, and last in professional influence, of all the medical corporations, owes its present unpopularity and comparative insignificance partly to the exclusive and invidious nature of its bye-laws, and partly to having neglected—nay, positively declined—to exercise that jurisdiction to which it was entitled by its charter, and of which a specific offer was made by the government in 1815, before their present great and extensive powers were conferred on the Society of Apothecaries. If we be right in regarding these as the chief points in which the College has erred, then are the remedies apparent—the *exclusive* principle must be abandoned, and a course of education laid down by which, and by which alone, with *or without* a degree from a University, any individual may become a physician. Evidence of having possessed ample opportunities, and proof of having adequately profited by them, ought clearly to be required of every one; and the College ought to specify the former in a curriculum of their own, and to judge of the latter circumstance not merely by verbal examination, but by testing the practical knowledge of the aspirant in the wards of an hospital. That the highest medical institution in the realm should re-

quire, or rather that it should admit, a degree, though from a place where any kind or where no kind of medical school exists, as a proof of sufficient education, —that it should examine and license, as we assert it has done, after a shorter curriculum and inferior education to that demanded of the aspirant at Apothecaries' Hall,—is an absurdity the most preposterous—an incongruity the most injurious to their own interests, and the most mischievous to medical science.

But let us not attach more blame to the present Fellows of the College than they deserve. Many among them, we know, are aware of the folly of their predecessors; and, accordingly, proposals of reform, though hitherto unsuccessful, have at different times been made. The questions to be decided, however, are by no means free from embarrassment in the detail; and it is upon those details, rather than upon the necessity for some change, that opinions have been divided. A committee was appointed last year, and certain resolutions, evincing more liberality than any thing which had previously been thought of, actually passed the College: meantime the Parliamentary investigation was begun, and the Fellows, apparently irritated at the treatment they experienced, rejected at a second sitting the conciliatory resolutions which had been previously agreed to, but which required confirmation. Some of those who had taken a great deal of trouble on the former occasion have refused to have any thing farther to do with the business; nevertheless, another committee was lately nominated, to consider whether any changes should be made in the statutes; with particular reference, we believe, to the existing distinctions among the Members of the College.

At present it would be premature to speak confidently of the result, particularly after the experience of last year, but we shall probably not mislead our readers in stating our conviction, that the first great changes in the shape of medical reform may be expected to emanate from the College of Physicians, and we have great reason to hope that they will be very much in conformity with the suggestions which have at various times been made in the pages of this journal. We do not mean that any thing which we have written has influenced the parties, but that our opinions have derived their weight simply from being found to correspond with those prevailing among the most intelligent members of the profession who have directed their attention to the subject. The improvements, which we greatly hope will have passed through their first stage before the present number of our journal is published, consist in establishing an educational curriculum, and in taking from the English graduate his admission to the Fellowship as a matter of course, and removing from other graduates the ban of exclusion which has so long been put upon them. All who have completed a certain course of study, and attained a certain age, would thus, in the first instance, be Licentiates, and all, after a certain time, be equally eligible to the Fellowship.

In any change so considerable as that which we have supposed, one difficulty in carrying it into effect will consist in the conversion of the existing Licentiates into Fellows. We would rather have seen these designations abandoned, as well as those of Candidates and Inceptor-Candidates, the only distinction retained being that of a governing body and commonalty; the former to be elected by the latter. But if we cannot get the best reform which is theoretically imaginable, we are not on that account disposed to reject the best which is found to be practically attainable. We trust, however, that a large and free admission into the

Fellowship will be made at the outset—say of all respectable men of ten years' standing in the College. It is at first starting on the new plan that the greatest jealousies will be felt, and the bitterest discontent excited, if a niggardly or a partial act of grace mark the commencement of the new arrangements; and therefore, if the College hope that its concession will be effectual to the purpose of pacification, it must be full, free, and liberal. The objections to admitting all the Licentiates are great and insurmountable, some of them being men who, never having had any adequate education, ought not to have been licensed by the College at all; but as the new regulations, if carried, will put an end to this abuse, so the number of persons thus circumstaneed will progressively diminish, till they become extinct.—The College will then consist exclusively of men who have passed through an extensive eourse of medical education; and all of whom will be Fellows, or equally eligible to the Fellowship. Thus will much of the invidiousness of the distinction be got rid of.

It is quite elear that if the number of Fellows be eonsiderably increased, some change must be made in the mode of government; indeed, business can never be carried on well where there are even so many as at present. Part of the contemplated plan, we believe, is to institute a eommittee or council, to limit the duties (or perhaps the privileges, if they will have it so) of the general body. Any such committee would of eourse be elected by the Fellows at large; and some arrangement of this kind would be so obviously required, that it is unnecessary to enlarge on its expediency.

The College, it would appear from what has been said above, has also at length opened its eyes to the absurdity of compelling students aspiring to the highest honours in medicine to leave the metropolis, where, more than in any other part of the kingdom, opportunities of studying to advantage exist. The obvious dilemma here is caused by the established custom of requiring a degree. But the College, as we have reminded it over and over again, can license those who have no degree; and being *physicians* would place its members, in public estimation, on the same footing as Doctors in Medicine: a physician without a degree would, at most, be but a nine days' wonder. Besides, it is quite certain that the late government had it in serious contemplation to vest the power of granting degrees in physic in some Body in London; nor can we suppose that the present ministers will be indisposed to do so, if the College consent (as of course they will) to place dissenters on the same footing as members of the established Church. We cannot state it as a fact, but, nevertheless, we strongly suspect, that some understanding with the government on the subject of degrees has been the immediate exciting cause of the present renewed spirit of reform. If, then, the College of Physicians were to do away with the present invidious distinctions—if they were to require a certain and high standard of education—if they were to create, or constitute, the successful candidates "physicians," in the same manner as the gentlemen in Lincoln's-inn Fields make "surgeons," and those at Blackfriars do "apothecaries"—and, still more, if, as we confidently anticipate will be the case, they obtain the power of conferring degrees in physic, then, we say, here will be a real and valid "reform"—one calculated to improve medical science, and to enable the corporation in Pall-Mall once more to raise its head, and take its proper place among the learned, the useful, and the influential institutions of the country.

THE LAST NEWS OF PHRENOLOGY.

SINCE the memorable *first of April*, 1833, when a member of the London Phrenologieal Society announced to that learned body that he had diseovered above sixty *new organs* in the head (which, added to Spurzheim's thirty odd, made up nearly the *century of inventions*), we have not heard a word about *the scieuce* in England. Nor are we aware that even in Scotland it has latterly exhibited any signs of life, if we except the impudent attempt—perhaps the death struggle—of a small party who endeavoured to get a section of the British Association at Edinburgh set apart for the diseussion of their skull doetrines! We almost regret the failure of these poor people, for it seems to have proved fatal to their existence—a thing we should be sorry for, were it only for our amusement sake.

Meantime the Paris worthies have not been idle. It is true, they have not fulfilled the lofty mission they had imposed on themselves—of perfeeting Gall's revelations, and preaehing them to all nations; but they have done something—they have, after years of most edifying small talk, and calling in from the high-ways and by-ways, from the shops and shambles, all who would be members, and take a part in the lectures on heads—they have issued a MANIFESTO.

Now then, at last, perhaps some reader may say, we have something tangible. We have so: but probably not exaetly of the sort that might have been anticipated. Hear what is said in the very first paragraph. The learned soeiety begin by stating their reasons for publishing a confession of faith: their object, it seems, is "to put a stop to the false attacks by whieh a science is assailed, *whose general principles have not been sufficiently fixed, or are not yet sufficiently understood*, in regard to the modifieations of which they may be capable."

This, surely, is what may well be called news; it takes us, we confess, quite by surprise, to hear the disciples of Gall announee that the fundamental principles of phrenology are yet unsettled. Why, Gall, and Spurzheim, and the most aetive of their followers, have done nothing else for the last thirty years but preach up *faith* in their system. Have they not encompassed sea and land to make proselytes? Yet here we have the secret out at last—that the doctrines, the primary principles, of *the science* are nought; that they are *in nubibus;* and that, if phrenology is to be put on a sure footing, its adepts must begin *de novo*, take to their horn-books, or rather their bone and plaster primers, once more.

But are we sure that there is no mistake?—that the document is quite official? To this we can only say, that it comes before us drawn up by M. Mège, an editor of the Paris Journal of Phrenology; that it was regularly discussed and adopted at a grand and solemn meeting; is signed by M. de Valetti, the secretary, and by M. Fossati (not *Moscati*) the viee-president of the society. It must, therefore, be at least considered as the authentic, as well as the deliberate, opinion of the majority of that learned body.

Following the paragraph just quoted, we have seven others of almost equal interest, under the several heads of Phrenology, Method, Philosophy, Edueation, &c. We have, however, no room to spare for a lengthened statement of the *new light* opinions: let us be content with seeing how *phrenology* is at present to be defined. "Phrenology," says the manifesto, "is the study of the nervous system generally, including that of the brain and nervous system in particular, both in man and animals; in other words, it is *the anatomy and physiology of the nervous system.*"

Indeed! How extremely kind of the *new* phrenologists to spread their mantle so wide as to cover (or their net to eatch) the whole medical profession throughout the globe! There is, however, a loophole open in the suceeeding passage, through whieh we beg leave to deeline the proffered honour, and to make our eseape. "The study of the brain and its annexes," says the document, "puts *organology* on a solid foundation—organology, whieh marks out the special functions of the brain denoted by the form of the skull *and by the temperament* of individuals."

Here is the old leaven again—maintaining the solid foundation of the bumps. But what is this to the heresy in the last clause? Is it not enough, we ask, to evoke the indignant shade of Gall, to introduce thus *the temperament* into the phrenological diagnosis of charac-

ter? To us it is matter of pure indifference—or if we have any preference, it is for the new modification. But what would Dr. Gall say to this adulteration of his pure Craniology?

In the paragraph on *Method*, the manifesto renounces all definitive enumeration of the organs, yet gives the lists of Gall and Spurzheim, without deciding in favour of either. Here again poor Gall is abandoned, and heresy is the order of the day.

The absurdities of the remainder of the manifesto cannot be allowed to pass unnoticed. All *philosophy*, past, present, and to come, is claimed as belonging to the domain of *phrenology*. Metaphysics, morals, theology, education, legislation—every science, in short, that has any connexion with man—belong by right (of assumption) to *phrenology*. Philosophers are gravely counselled to betake themselves to the study of the brain, while *they* might, we imagine, with better reason, send the phrenologists to study a little logic and language. The authors of the manifesto would probably not be the worse for studying a little mnemonics also. They forget that their lofty flights on phrenology are placed between their opening announcement of want of principles, and their *appeal* to all rational thinkers: so that this *unfounded*, this *conjectural*, this *as yet unreal* science, is extolled by our Parisian worthies as after all the science of sciences—the very keystone of the edifice of human knowledge! After this, we may surely congratulate ourselves on the progress made by the human mind during the last four or five thousand years!

HOPITAL DE LA CHARITÉ, PARIS.

Rupture of Viscera in the Cavities of the Body, without external appearance of lesion.

By M. Rognetta.

During the summer of 1831, one day as M. Boyer was paying his visit at La Charité, a young mason was brought in, who had just fallen from a scaffold. He had breakfasted shortly before. His aspect shewed extreme anxiety; he was as pale as death; his pulse filiform. In half an hour he expired, having had nothing done for him in the hospital except being laid in bed. No mark of external injury was observed on the body, except a large ecchymosis on the epigastric region, betokening a bruise of that part.

At the *post-mortem* examination, on opening the abdomen there was found on the intestinal mass a great quantity of fæcal matter; it had made its way through a rupture of the transverse colon, which still contained a considerable quantity of the same substance. The opening in the gut was as smooth as if it had been made with a knife, and ran round nearly the whole calibre of the colon. All the other organs of the deceased were healthy; nor did there appear to be any thing unsound about the intestine which had given way. M. Boyer said that this was the second case he had seen of rupture of the great intestine from contusion, without any breach of continuity on the external parietes.

I took a note of this case at the time, as I thought it remarkable; but within the last few months another example has fallen in my way, which may, perhaps, be considered as still more curious and interesting. This was a case of laceration of the liver, without any rupture of the abdomen.

In September last, while M. Guersent, *fils*, did the duty of M. Roux at La Charité, a young man, 21 years of age, was taken in, labouring under the effects of bruises which he had just received from the wheel of a carriage that had passed over his body. The patient was the *conducteur* of one of those vehicles called *coucous*, and had fallen from the seat: there were ten persons in the *coucou* at the time, and the wheel passed over his body. The track made by the wheel was along the right side, from the groin to the shoulder; but the external injury appeared to be of no consequence. The patient, however, complained of his breathing, and of pain in the region of the liver. He was bled, and poultices were applied.

Some days after, jaundice made its appearance, and an effusion in the right side of the chest was detected posteriorly. Blisters were put to the part. The effusion continued; the breathing became more embarrassed; and fever set in.

About a fortnight after the accident a swelling was perceived over the liver; this spread, and extended from beneath the last false ribs to the median line of the body. Fluctuation in the swelling; jaundice and fever continue.

Most of those who saw the patient gave their opinion that there was clearly an abscess of the liver; but M. Guersent (I record it to his credit) rather conceived that there was a large collection of bile in the gall-bladder, or perhaps an aqueous cyst in the liver, but no abscess.

The tumor was cautiously opened with a bistoury, when a *litre* (two pints) of pure bile came forth. The opening remained fistulous for some time, giving issue to a coloured liquid supposed to be bile. No remarkable accident supervened.

When M. Roux returned to the hospital he saw the patient, when, upon maturely examining the case, he announced that it was the *stomach* that had been opened: the liquid that came forth, he said, proceeded from the interior of that viscus. The patient died shortly after, of confluent small-pox, when, upon holding a *post-mortem*, it was found that the large lobe of the liver had been ruptured. The extent of the laceration was about two inches in length, and as much in depth. A kind of cellular cyst had been formed about the ruptured part, into which the bile gathered; and this was the cyst that had been opened by the operation.

These cases are certainly not unique in surgical practice; yet, with respect to the first example, it is perhaps more usual in like circumstances to meet with rupture of the stomach than of the colon. As to the viscera of the chest and head, their laceration by simple pressure, without lesion of the solid walls that contain them, is difficult in adult age, unless we confound the effects of locomotion with those of pressure. It has, however, sometimes happened, in the case of young children, in consequence of the yielding nature of the walls just mentioned. Morgagni records such a case in his *Sed. et Caus.* Ep. liii. n. 33; and my colleague, M. Tronchin, has treated with me a child, two years of age, whose brain was injured (*lésé*) by simple pressure, without any rupture or laceration of the external parts.

ST. GEORGE'S HOSPITAL.

Fractured Pelvis—Hæmorrhage—Suppuration within the Pelvis.

Charles White, aged 17, was admitted January 13th, under the care of Mr. Cæsar Hawkins, having just before been knocked down upon his face by a horse, a loaded dung cart having then passed over the back of the pelvis. On his first admission he appeared to be dying of internal hæmorrhage, with much pain and distension of the abdomen; it was thought, however, that the bleeding was probably external to the peritoneum within the pelvis, as the pain and swelling were chiefly at the lower part of the abdomen; no blood, however, appeared externally except on the back of the nates, which were much contused. In a few hours, however, he recovered from the hæmorrhagic collapse, though still complaining of much pain. He had made water an hour before the accident, and was unable to make water himself, on account of a rupture in the urethra. A gum-elastic catheter was in the evening passed with some difficulty into the bladder through the lacerated part, in which there seemed to be a good deal of coagulum, and it was fastened in the bladder, the water in which was quite clear, and free from blood.

Jan. 14th.—Seems comfortable, except from pain in the lower part of the abdomen, which was hard and tense, as if from blood in the muscles. Pulse frequent and sharp, as if from hæmorrhage; bowels confined.

℞ Cal. gr. iij.; Jalapæ, gr. xvi. M. statim sumend.

15th.—Tolerably comfortable: skin rather hot; less tenderness and pain.

℞ Haust. Salin. ℥iss.; Magnes. Sulph. ℥ss. M. 6tis horis sumend.

Examination of the pelvis gave the sensation of obscure crepitus, as if of cartilaginous surfaces rubbing against each other in the right iliac synchondrosis, and a sensation of crepitus was also perceptible in the front of the pubes near the lacerated part of the urethra. Motion, especially of the right leg, gave him also very great pain.

16th.—He last night began to complain of more pain in the abdomen, and to-day has much tenderness and pain above the pubes; this continues to-day, and he has an expression of much anxiety of countenance, with a small thready pulse, at 116, and fever; bowels open. Mr. Hawkins believed that there was inflammation of the lower part of the peritoneum, and directed him to be bled, which was done to ten ounces. This gave him much relief, and the pulse became fuller and stronger, the blood being much buffed and cupped.

The water now containing some mucus from the bladder, Mr. Hawkins withdrew the catheter, and found it encrusted with phosphates; a new one was then passed in, and the bladder was injected with warm water once a day, from which he experienced much benefit, and the urine became again clear.

Vespere.—Pain continues, though less.

Hirud. xvi. abdomini.

℞ Hydr. Submur. gr. ij.; Opii, gr. $\frac{1}{6}$th. M. Ft. Pil. 4tis horis sumenda.

17th.—Seems a good deal better, but the pulse has still some sharpness, and the pain is not gone.

V.S. ad ℥viij. Blood cupped and buffed, though less. Cont. Pil.

18th.—All expression and anxiety gone; much less pain and tenderness. Catheter again changed, and found slightly encrusted with phosphate of lime, a little mucus having also again been secreted in the urine.

Cont. Pil. 8vis horis.

19th.—Omit. Pill. Beef tea, ½ pint.

21st.—Still going on well, and free from pain.—Fish diet.

22d.—Does not seem so well, being weak and nervous, and losing his appetite, though not complaining when not moved. A good deal of fœtid bloody pus coming away by the side of the catheter, and no difficulty being experienced in making water when this was tried, the catheter was withdrawn, and he was allowed to make water, so that the pus was not confined, and no irritation excited in the bladder, of which he made much complaint. Bowels somewhat purged, and the evacuations fœtid and dark. Took castor oil yesterday.

℞ Calomel, gr. iij.; Opii, gr. ss. M. statim.

℞ Haust. Rhei. ℥j. post hor. iij.

23d.—Same symptoms, but increased; restless and anxious; unable to take any food; complains of much pain in the abdomen and perineum, in which last situation no swelling could be perceived; much bloody purulent fluid coming away by the urethra and by the catheter, the point of which entered a cavity communicating with the perineum, though not appearing externally, so that Mr. Hawkins believed that suppuration had taken place on the inside of the pelvis where the blood had been extravasated, probably about the period when the peritonitis had come on. He therefore passed a catheter with some difficulty into the bladder, the water in which was still quite clear, and made a large incision in the perineum, the cavity in which was not large; but an opening was found on the right side, going into the interior of the pelvis, which was enlarged by the knife, and a large quantity of the same putrid bloody pus was let out. The finger, passed into the pelvis through the opening, detected an extensive fracture across the thyroid foramen, on the right side, the broken portions being partly loose, and extensively deprived of periosteum, in the cavity from which the fluid had been evacuated.

Wine, arrow-root, &c. were given, but the prostration of strength went on increasing; the next day he had much vomiting, and died in the evening of the 24th.

Examination of the body.—Peritonitis only at the lower part of the abdomen, where the sigmoid flexure of the colon, the omentum, and part of the small intestine, were firmly adherent to the peritoneum lining the parietes, and covering the bladder; and the bowel at this part was very soft, and easily lacerated. A large quantity of blood was extravasated on the outside of the peritoneum, chiefly around the pelvis and back of the abdomen, the peritoneum being every where raised and separated from the adjacent parts, the blood having even made its way along the mesentery to the coats of the intestines, and extending in the same way into the rectum and colon. The bladder was contracted and small, though uninjured, in the midst of a mass of coagulum above an inch thick, between the peritoneal and muscular coats, and nearly as much in front. The blood had also been driven a little into the substance of the iliac and psoæ muscles on both sides, and someway up the anterior parietes of the abdomen, chiefly, however, between the peritoneum and transversalis. There was very little blood in the adductor muscles of either side, and very little in the perineum, so that, although the source of the bleeding could not be ascertained, it did not appear at all likely to have been effused from the ruptured urethra, but from some of the vessels of the interior of the pelvis injured by the fractured bones.

The laceration of the urethra had taken place just under the symphysis, and was probably occasioned by the fracture of the left side.

The front of the pelvis, between the bladder and innominata, and deep in the pelvis, was occupied by a large cavity in a sloughy state, which reached up also some little way on the front of the abdomen. The suppuration had not extended, however, to the blood on the posterior part of the bladder, or among the intestines. In this cavity much of the fractured bones on the right side lay nearly loose and dead, so that the adductor muscles formed the boundary of the abscess. The right os innominatum was broken into several portions through the thyroid foramen, the transverse ramus of the pubes being separated at the symphysis, and loose and dead from the line of fracture. The ascending branch of the ischium was broken separately, nearly down to the tuberosity. The left innominatum was broken across the thyroid foramen in the same way, though to a less extent, and none of it seemed deprived of periosteum by the sloughing abscess. The ilium was separated from the sacrum at the synchondrosis on both sides, where a little blood had also been effused, but evidently from small vessels only, quite distinct from the great extravasation. On the left side a small portion of the sacrum had been broken off at the joint.

MIDDLESEX HOSPITAL.

Case of Tumor in the left Auricle.

Susan Rowland, on her admission into the hospital the 10th of December, stated herself to be 45 years of age, and single; that she had spit blood occasionally for five years, and had been afflicted with cough and palpitation for the last five months. She was anasarcous, had a livid countenance, there was dyspnœa, orthopnœa, decubitus only on the left side, fainting, small pulse, throbbing of the jugulars, expectoration of blood (sometimes in small globules), crepitation in the lower lobe of the right lung, slight bronchophony; percussion dull.

Slight increase of impulse in the heart —sounds peculiar; between the first and second sound there is heard a supplementary one, which it is difficult to describe, but it suggests the impression of some obstruction in the aorta or in the mitral valve.

The patient speedily became worse: nights disturbed; more anasarca and orthopnœa, under which she rapidly sunk.

The sounds of the heart altered slightly a short time previous to her decease, the additional sound appearing to run more into the second, whilst originally it seemed to have been more closely connected with the first.

Post-mortem appearances. — Pulmonary apoplexy at the base and at the apex of the right lung.

Heart.—Right auricle and ventricle much dilated. In the left auricle, a tumor, as large as an egg, attached by a pedicle to the inner surface of that cavity, just below the opening of the pulmonary veins, and at the point of the fossa ovalis. The tumor was covered by a thin, smooth, shining membrane, a prolongation of that of the lining membrane of the auricle, which it in every respect resembled, and which gave to the pedicle (about the size of a quill), a degree of strength and resistance that enabled it to sustain the heart when raised by grasping the tumor.

The tumor felt solid, like spleen, when cut; its section presented a firm gelatinous substance, of uniform appearance, of a deep red colour, not unlike recently-coagulated blood, but as if contained in a fine cellular tissue*. On being for some hours exposed to the atmosphere, the investing membrane having become somewhat dry, blood-vessels of an arborescent form were perceptible therein, very similar to the appearance of the investing membrane of the chick as it leaves the shell.

* The writer of this account regrets not having had an opportunity of ascertaining by maceration what was the structure of this tumor.

CONGENITAL DEFICIENCY OF THE IRIS.

Dr. E. Cazentre, of Bourdeaux, illustrates this rather rare vice of conformation by a case occurring in his own practice. M. M——, aged 46, of robust constitution and perfect health, has both his eyes deficient in the iris. In the right there cannot be detected the least vestige of that membrane; in the left there is merely a slight greyish crescent-shaped slip, which would seem to be a rudiment of the iris. Both corneas are a little more convex and somewhat smaller than ordinary; the ciliary ligaments also present an equally contracted circle, the inner circumference of which, in some measure, supplies in each organ the office of a pupil, and from which there is a bluish-black reflection of the pigment of the choroid. The deformity is congenital. M. M—— has been remarked, from his earliest childhood, for the strange appearance of his eyes. He was thought blind at first, and it was not till after the lapse of some time that he was found sensible to the light. At present there is a considerable disturbance of the visual function. He cannot see objects distinctly unless they be very near. In the bright day-light his powers of vision are confused, his eyes watery, the lids nearly closed, and the pavé, or any bright substance reflecting the light on his eyes, gives him severe pain in the orbits and head. He cannot read by candle-light; all objects appearing to him then as encircled with a thick fog. In the shade, or after sunset, he can see best. Reading fatigues him much, though assisted by spectacles, which he constantly wears. He can, however, peruse a journal in a light, or rather a darkness, which would render the attempt useless in any other person. In short, the obscurity of night is the most convenient medium in which to conduct his movements and proceedings.

It is not difficult to account for the circumstances, from the anatomical state of the parts. The iris, with its suitable aperture, the pupil, is required for the ordinary function of sight; and the pupil must be endowed with the appropriate degrees of contractility and dilatation, in order that it may present to the rays of light an opening proportioned to the intensity and excitability of the retina. Without this, the harmony of the function is disturbed. But the state of the parts in M. M. is not so arranged. Through the central opening, which is always too large, a constant quantity of luminous rays enters; and the more active these rays, the more the vision is troubled. Thus the blaze of the fire, the light of the

candle, and the sunshine, produce the most uncomfortable feelings, which can be only very partially remedied by the almost total closure of the eyelids. There is reason, moreover, to suppose that there is in the present case a more than ordinary excitability and sensibility of the retina, since M. M. can easily read written characters in great obscurity, and the very darkest night seems well suited for directing his steps. May we not suppose this to be owing to the large and fixed aperture in the ciliary circle admitting a more considerable proportion of luminous rays than in the ordinary condition of the eye?—*Gaz. des Hóp.*

RETENTION OF URINE.

Dr. Somervail, of Virginia, gives a mixture of three grains of camphor, with five of muriate of ammonia, in a gum-arabic julep, every two hours, in cases of retention of urine where the catheter cannot always be conveniently applied.—*American Journal.*

COLLEGE OF SURGEONS.

LIST OF GENTLEMEN WHO RECEIVED DIPLOMAS IN JANUARY 1835.

Isaac Flower, Codford-St.-Peters, Wilts.
James Cunningham, E.I.
John Symons Longdon, London.
Decimus Hands, London.
John Hodgson, Chepstow.
Alfred Hall, London.
Henry Drew, Bath.
John C. K. Coates, Salisbury.
Robert Howard, Dean-street, Southwark.
Mark Brown Garrett, Shaftesbury.
John Spencer Birch, Blackburn.
Wm. Augustus Walford, Speldhurst-street, St. Pancras.
Louis James Lovekin, E.I.
Robert Dade, London.
Henry Taylor, Oxford.
James King Walter, Devonshire.
Frederick Shury, London.
Walter Duke, Hastings.
Prior Purvis, Greenwich.
Henry Affrel Snowdon, Ramsgate.
Albert Philip Owen, Tenterden.
Nathaniel Millard, Haverfordwest.
Frederick Palmer, Yarmouth.
Wm. Foxton Haley, Moulton, Spalding.
William Reidy, Kerry.
Francis Wyley, Higham, Stafford.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

January 29, 1835.

James Clark, Hoxton Town.
John Drury.
Joseph Ash Kirkpatrick, Clitheroe.
John Spencer Birch, Blackburn.
William Kennard, London.
Benjamin Newbury, Cheltenham.
Edwin Smith, Cirencester.

February 5.

Adolphus Taylor.
John Gill, Stoke Courcy, Somersetshire.
John Tuer, Leeds.
John Llewellyn, Cowbridge, Glamorganshire.
Geo. Robert Vann Freer, Enderley, Leicestersh.
Francis Lovell.

WEEKLY ACCOUNT OF BURIALS,

From Bills of Mortality, *Feb.* 3, 1835.

Abscess	1	Heart, diseased	3
Age and Debility	34	Hooping-Cough	23
Apoplexy	8	Inflammation	43
Asthma	24	Bowels & Stomach	9
Cancer	1	Brain	3
Childbirth	1	Lungs and Pleura	14
Consumption	58	Liver, diseased	5
Convulsions	50	Measles	20
Croup	5	Mortification	6
Dentition or Teething	9	Paralysis	3
Dropsy	16	Small-Pox	10
Dropsy on the Brain	14	Sore Throat and Quinsey	1
Erysipelas	1	Thrush	3
Fever	4	Tumor	1
Fever, Scarlet	7	Unknown Causes	1
Fever, Typhus	1		
Gout	2	Stillborn	14
Hæmorrhage	1		

Decrease of Burials, as compared with the preceding week . . . 192

METEOROLOGICAL JOURNAL.

Kept at Edmonton, *Latitude* 51° 37′ 32″ *N. Longitude* 0° 3′ 51″ W. *of Greenwich.*

Jan. 1835.	Thermometer.	Barometer.
Thursday . 22	from 30 to 40	30·16 Stat.
Friday. . . 23	31 45	30·14 to 30·12
Saturday . 24	38 49	30·08 30·06
Sunday . . 25	39 51	30·06 30 11
Monday . . 26	41 53	30·16 30·28
Tuesday . 27	38 48	30·28 30·23
Wednesday 28	37 47	30·20 30·17

Prevailing Wind, S.W.

Except the evenings of the 25th, 26th, and 27th, generally cloudy.

Jan.		
Thursday . 29	from 38 to 49	30·12 to 30·10
Friday . . 30	36 51	30·12 30·17
Saturday . 31	42 52	30·24 30.28
Feb.		
Sunday . . 1	39 52	30·26 30·22
Monday . . 2	39 47	30·15 30·07
Tuesday . . 3	38 49	30 06 30·04
Wednesday 4	38 52	30·24 30·33

Prevailing wind, S.W.

Cloudy during the forenoon, generally; evenings clear.

Rain on the morning of the 2d inst.; depth, ·075 of an inch.

Charles Henry Adams.

Notice.—If our correspondent at Cranborne will send us a portion of the MS. we shall be able to give him an answer.

Erratum.—In Dr. Ley's last paper, page 624, col. 1, line 41, *for* Luntaud, *read* Lieutaud.

Wilson & Son, Printers, 57, Skinner-St. London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, FEBRUARY 14, 1835.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture XX.

DISEASES OF THE PLEURA.

HYDROTHORAX.

By hydrothorax we mean an effusion of limpid serosity into one or other, or both, the cavities of the pleuræ, not depending upon previous inflammation.

This disease has been denominated *Dropsy of the Chest;* more commonly also *Water in the Chest*; and has often been mistaken for other affections—as diseases of the heart, aneurism of the aorta, emphysema, and œdema of the lungs.

Hydrothorax may exist in the idiopathic or sympathetic forms: the first is so rare, that Laennec calculated he had not met with it more than once in 2000 post-mortem examinations. The fluid then occupies one side of the chest only. The sympathetic form usually affects both pleuritic cavities, and is a common consequence of acute and chronic diseases; especially of scarlatina, and, above all, of organic lesions of the heart. Laennec states that sympathetic hydrothorax indicates the rapid and fatal termination of the disease which is its cause; that it rarely commences to develop before a few days or hours preceding death, and that nothing is more uncommon, even in diseases of the heart accompanied by universal leucophlegmasia and ascites, than a hydrothrorax whose signs have appeared eight days before death. I entirely differ from him upon this point, for I have seen the signs of the sympathetic affection presenting themselves two or three months before the fatal termination of the disease, and have afforded temporary relief by tapping the chest in two individuals who had long laboured under sympathetic hydrothorax.

In both forms of the disease the effused fluid presents the same charaeters; it is limpid, and of a fawn colour: the pleuræ are perfectly healthy. The quantity of the secretion varies from a few ounces to many pints, and the effects of its accumulation are precisely the same upon the surrounding parts as I have described in effusion from inflammation of the pleura; the signs are also similar. Thus there is absence of the respiratory murmur, dulness on percussion, œgophony, altered position of the heart, enlargement of the side affected, effacement of intercostal spaces, immobility of ribs, with dyspnœa and cough.

General signs.—Sympathetic hydrothorax is itself one of the general signs of some other disease—as of fevers of long duration, and of affections of the heart. I shall again advert to this subject when we arrive at the consideration of the latter class of disorders.

Treatment.—Idiopathic hydrothorax is so rare, that I have not had occasion to treat it, but the indications would be the same as for any other species of dropsy. The treatment of the sympathetic form should be subservient to that of the disease of which it is the consequence, and will be spoken of hereafter. I have twice directed the operation of paracentesis thoracis in these cases, and have thereby produced temporary relief.

PNEUMO-THORAX.

By pneumo-thorax is meant an effusion of acriform fluids into the cavity of the pleura. This disease, in its simple form, is rare, although it is not very infrequent when combined with serous or puriform secretions in the same cavity. This affection was first mentioned by Riolanus, and

afterwards became the subject of the inaugural thesis of the celebrated Itard, physician to the hospital of "Sourds-Muets," at Paris.

The gases accumulated in the pleuritic cavity are sometimes inodorous, at others fœtid, and similar to sulphuretted hydrogen. Their quantity is occasionally very considerable, and they then produce the same effects upon the surrounding parts as serous or puriform fluids placed in the same situation: the lung becomes compressed, the heart is pushed from its natural position, the thoracic parietes are dilated, and the diaphragm depressed.

Causes.—Air is frequently met with in the pleura, combined with fluids resulting from chronic pleurisy. In that case, when there is no communication between the pleura and the bronchial tubes, we must suppose that it is formed from the decomposition of that fluid: the gas then has a most fœtid odour, assimilating to that of sulphuretted hydrogen.

A tubercular excavation has been seen to burst into the cavity of the pleura, producing a free communication between it and the bronchial tubes: atmospheric air then of course passes into the pleura, which in its turn produces pleurisy and consequent effusion of fluid. An excavation has also been seen to burst into the pleura, and not into the bronchial tubes; the softened tubercular matter then irritates and inflames the serous membrane, and a liquid secretion is again the result, the decomposition of which affords air sufficient to produce pneumo-thorax.

Gangrene of the lung causes pneumothorax; not only from the decomposition of the structure of the organ, but also from its establishing a communication between the bronchial tubes and the pleuritic cavity. Puriform secretions are always present in this case, the decomposition of which also produce aeriform exhalation.

Blood effused from any cause into the pleura, may decompose, and give rise to the formation of air.

A violent blow upon the chest may rupture the pulmonary pleura, and occasion extravasation of air into its cavity. Hewson and Laennec mention instances of this.

The rupture of an emphysematous lung may cause effusion of air into the pleura. I have seen a remarkable instance of this case in a child, in whom the necessity for respiration had so increased in one lung, in consequence of the total hepatization of the other, that it had become completely emphysematous; one or more of the enlarged air-vessels had ruptured, and air had effused and accumulated in the pleura, in such quantity that the lung was compressed to a very small size.

Finally, an aeriform fluid may be generated in the cavity of the pleura, without any visible change in the membrane, or appearance of any other effusion. The serous membrane has then occasionally appeared drier than usual: Laennec has seen it as dry as parchment.

You thus perceive, gentlemen, that simple pneumo-thorax is a rare affection, and that there are only two or three apparent causes of it—1st, from the rupture of an emphysematous lung; 2dly, from a blow rupturing the pleura pulmonalis; 3dly, from a spontaneous exhalation of air: while, on the other hand, the disease frequently arises from the decomposition of liquid effusions, or from the direct passage of air from the bronchi into the cavity of the pleura, constituting cases of what Laennec calls pneumo-thorax with effusion. Let us first examine the signs of simple *pneumo-thorax*, and then those of *pneumo-thorax with effusion.*

Signs of Pneumo-Thorax.

Functional.—Dyspnœa is a constant sign of this disease. Cough is not always present, except the bronchial tubes be also affected.

Local.—As the loudness of the sound upon percussion depends upon the quantity of air contained in the chest, so in this case the diseased side of the thorax is always more sonorous than natural. But this sign alone is insufficient to determine the nature of the affection, because the sound is also as loud upon percussion in emphysema of the lung. An error, too, might arise from the supposition that the most sonorous side was the most healthy one, when, in fact, it is that which is diseased.

But the conjunction of the signs derived from auscultation and percussion give certain proofs of the presence of air in the cavity of the pleura: thus, if the respiratory murmur be entirely absent on the side which is most sonorous by percussion, you may fairly infer that it is a case of pneumo-tharax. It is scarcely necessary to state, that the respiratory murmur may be heard, as in empyema, between the base of the scapula and the corresponding part of the vertebral column; and for the same reason, because of the lung being compressed against the vertebræ at that part.

In consequence, also, of the pressure of the air upon the intercostal muscles and ribs, the side affected becomes larger, and the degree of increase may be determined by measurement.

The only affection which produces similar signs is emphysema of the lungs; but there are differences which render the two diseases easily distinguishable: for in pneumo-thorax the absence of the respiratory murmur is complete, except at the

points indicated; but it may still be heard, although feebly, at different points of the chest, in emphysema. In the latter disease a slight rhoncus is occasionally apparent, even close to the ear, which never occurs in pneumo-thorax. The dry crepitating rhoncus is also pathognomonic of emphysema. Finally, pneumo-thorax is always a sudden affection; but dilatation of the air-cells is a chronic disease.

Signs of Pneumo-thorax with Effusion.

In this combination the respiratory murmur is absent all over the surface of the affected side, except at the part corresponding to the situation of the compressed lung. The sound on percussion varies: thus at the lower part of the chest, where the fluid has gravitated, it is dull; but at the upper part, where the air is accumulated, it is loud.

There are three other signs, which, when united, are pathognomonic of air and fluid matters co-existing in the pleura. These are the *hippocratic fluctuation, the tintement metallique*, and the *bourdonnement amphorique.*

Hippocratic fluctuation.—Succussion.—Hippocrates proposed, for the purpose of discovering fluids in the chest, that the patient should be placed on a solid seat, his arms being extended by an assistant; and that he then should be shaken by the shoulder, to determine a fluctuation.

This method of succussion had fallen entirely into disuse, although no doubt it had been often tried, but without success, in the great majority of cases. We have, however, several instances on record, in which a fluctuation has been felt by the patient himself upon a sudden and spontaneous movement of his own, as in turning quickly in bed, or in descending a staircase, or in riding on horseback. There can be no doubt that when a fluctuation is thus accidentally produced, it might also be caused by the Hippocratic mode of succussion, as I have verified in a great number of cases.

What is the reason that succussion will induce fluctuation in some cases of fluid in the chest, and not in others? The reasons are obvious. In empyema or hydrothorax nothing is contained in the cavities of the pleura but liquids; no movement in such cases can produce fluctuation, no more than it could in a perfectly filled bottle; but if air co-exist with the fluid, as in pneumo-thorax with effusion, then the fluctuation becomes distinct, as it would upon shaking a bottle partly filled; for the fluctuating sound can only be produced by the reciprocal action of air and liquids upon each other in motion.

Fluctuation upon succussion is, then, a sign of pneumo-thorax with effusion. The liquid matter should always of course be in a certain quantity; but the loudness of the sound depends upon the air being in the greatest proportion, for we constantly find that if the pus or serum predominates, the sound of the fluctuation is slight; if the air be in excess, it is considerable.

This sound is always distinguishable by the stethoscope; and even when slight, it may be detected by it when it cannot be heard by the intermedium of the air. If the hand be also applied to the surface of the chest, the shock or vibration produced by the fluctuation may easily be felt.

There is another case in which air and fluid may co-exist in the same cavity, and in which, consequently, fluctuation should be produced by succussion;—I mean a very large tubercular excavation, containing a certain quantity of secretion within it. I have essayed in many of these cases to produce this sound, but never could effect it. I believe this arises from the fluid being in very small quantities in such cavities; perhaps also their soft parietes are not equally favourable to the production of fluctuation.

Tintement metallique.—I have already described the nature of this sound, in my lecture on auscultation. It is like that produced by frequently and gently striking a thin metallic or glass vessel with a pin. It is heard during the acts of respiration, speaking, or coughing. The tintement metallique indicates the presence of air and fluid in the pleuritic cavity; but Laennec asserts still more—that it is a proof of a fistulous communication between a pulmonary excavation, opening at once into the bronchi and pleura. I have often, it is true, met with a fistulous opening when the tintement metallique has been present, but often also I could not, after a most careful examination, discover any such fistulous communication. I have therefore arrived at the conclusion that this sign, although perfectly indicative of pneumo-thorax with effusion, is not pathognomonic of a fistulous opening between the bronchial tubes and the cavity of the pleura. The tintement metallique is also a sign of a large tubercular excavation, containing a certain quantity of fluid; for here the re-union of the circumstances necessary to its formation obtains—that is, there is a large cavity containing air and liquid.

Bourdonnement amphorique. — This is a sound like the buzzing of a bee in a large vase. There are, however, great varieties in this sign, especially in its loudness. It is always somewhat argentine, or metallic; it is occasionally like a thin, shrill, and scarcely audible, silvery whistle, softly resounding afterwards, as if echoing in a metallic vessel. This sound is always indicative of air and fluid contained in a large cavity in the lung, or of pneumo-

thorax with effusion. I believe bourdonnement amphorique never occurs in the latter disease, except where there is the fistulous communication before spoken of: it appears to me to be formed by the air passing into the bag of the pleura through the fistula, and resounding afterwards. It is produced during respiration, speaking, and coughing.

As the presence of a certain quantity of liquid and air in an excavation in the lungs, or in the pleuritic cavity, causes these sounds, have we any diagnostic signs by which we can distinguish whether they arise from one lesion or the other?

In the first place, I have never met with an instance of fluctuation in a tubercular excavation, although I have always attempted to produce it when I have heard the tintement metallique, or bourdonnement amphorique. I do not, however, deny the probability of its occurrence, but I may be fairly allowed to infer it must be very rare indeed. In the next place, when there is a tubercular excavation, the tintement metallique is usually confined to the upper half of the lung, and in pneumo-thorax with effusion it is much more extensive, although I once met with so large a tubercular cavity that scarcely any of the lung remained, except a small mass attached to the larger divisions of the bronchial tubes, and a thin lining of its substance adhering to the costal pleura: in this case, these two sounds were audible all over the side affected, but still there was no fluctuation. Thirdly, I have observed that patients having tubercular excavations, however large, lie indifferently on either side, whilst those afflicted with pneumo-thorax and effusion prefer resting on the diseased side.

In the present state of medical science, we can effect but little, indeed, by any treatment, because the disease is almost constantly combined with phthisis; at least I have not met with a single instance in which it was not. I have very frequently tapped the chest on these occasions, but never produced any thing but temporary relief; in fact I have now ceased performing the operation of paracentesis thoracis in these cases, except the patient be very distressed by dyspnœa. I would recommend you, gentlemen, when you have determined upon evacuating the fluid, always to explain to the friends the nature of the case with as little technicality as possible; state that you cannot save, but may ease, the patient, and possibly protract his life for a little time.

I now present a tabular view of the number of times I have directed the operation of paracentesis thoracis, the nature of the case for which it was performed, the names of the operators, and the reults:—

Nature of the Cases.	Operators.	Recovered	Under Treatment.	Died.	Observations.
Empyema	Mr. Sturkey, Lung Infirmary	..	..	1	*Empyema.*—Of the 16 cases, 12 have recovered, and 4 have died. Of the 12 individuals cured, 5 were under 6 years, one at 11, one between 18 and 19, and 5 above 25 years of age. In three of the unsuccessful cases, the lungs could not expand after the evacuation of the fluid, in consequence of the thickness of the false membranes covering them; of the third I have no account.
	Mr. Martin, Surgeon, R. N.	1	..	..	
	Mr. Headington	1	..	..	
	Mr. John Scott	4	..	1	
	Mr. Kiernan	2	..	..	
	Mr. Herring, Lung Infirmary	3	..	1	
	Dr. B. Babington	1	..	..	
	Mr. Skey	..	..	1	
	Total Empyema	12	..	4	
Pneumo-thorax with effusion	Mr. Headington	..	..	3	*Pneumo-thorax with effusion.* — All died, from tubercular combinations.
	Mr. John Scott	..	..	2	
	Mr. Kiernan	..	..	3	
	Mr. Bryant, Clapham Road	..	..	1	
	Total Pneumo-thorax	..	..	9	
Hydrothorax	Mr. Herring, Lung Infirmary	..	..	1	*Hydro-thorax.* — These cases were of the sympathetic form consequent upon diseases of the heart. These patients were tapped merely with a view to temporary relief.
	Mr. Kingdon	..	..	2	
	Total Hydrothorax	..	..	3	
Total of Operations				28	

Note.—This Table being revised in December 1834, varies in the number of cases from that given at the time the lecture was delivered—in March, 1834.

Pleuro-Peripneumonia.

Inflammation of the pleura and of the substance of the lungs often co-exist. Laennec has considered these combinations under three forms or varieties. 1st. Peripneumonia complicated with slight pleurisy; 2d. Pleurisy with slight peripneumonia; 3d, where the inflammation of the pleura and the lungs is of nearly equal intensity.

1. *Peripneumonia combined with slight pleurisy.*

There are few cases of peripneumonia in which the pleura is not slightly affected, for when the inflammation of the lung has reached the surface of the organ, the pleura covering it inflames, and a thin false membrane is formed, and is exactly bounded to the part where the disease has gained the surface; sometimes even a false membrane is also formed upon the costal pleura, exactly opposite. When hepatization attacks a certain portion of the lung only, there will be effusion of fluid if the pleura be also inflamed; but if the organ be almost entirely consolidated, it presents so firm and incompressible a mass that there will be no effusion, but merely a very thin and incomplete false membrane; thicker, however, at the edges and fissures, and on some points, than on the generally inflamed surface.

Signs.—If the patient were seen for the first time in this state, it would be very difficult to distinguish whether he laboured under pleurisy with effusion, or hepatization of the lung; for the dulness on percussion, and the absence of the respiratory murmur, would be the same in both cases. But when a lung is completely hepatized, there is always a very loud and distinct bronchophony, almost similar to pectoriloquy, at various points, particularly at the summit and the root of the lung; a sign which does not exist, to the same extent or degree, either in pleurisy or pleuro-peripneumonia.

But if the disease has been seen from the beginning, it is almost impossible to mistake it, for the rhoncus crepitans always precedes the absence of the respiratory murmur, and the dulness of the sound on percussion only appears gradually. In pleurisy the dulness is sudden on the whole of the side affected. The œgophony also occurs, at least for a day or two, in pleurisy.

2. *Pleurisy, with slight Peripneumonia.*

It occasionally happens, when a pleurisy is severe, and accompanied by a considerable and rapid effusion, so that the lung is extensively and speedily compressed, that inflammation develops itself in some points of the organ, usually in the inferior lobe; these points are often isolated, and of slight extent, constituting what has been called *lobular pneumonia*. It is probable that the inflammatory action in the lung is moderated by the pressure of the effused fluid, so that it is confined to a few lobules, and cannot extend farther. The lobular pneumonia rarely proceeds to the stage of purulent infiltration; its resolution is slower than that of simple peripneumonia, and it presents very peculiar anatomical characters: thus the lung is less firm, and more flabby, than when in a state of hepatization; the pulmonary tissue is of a red, violet, or gray tint; a section of it presents the granular appearance of hepatization; it has altogether the aspect and consistence of muscular flesh which has been bruised to render it tender. Laennec denominates this state *carnification*. There is now no trace of air cells; no air can be passed from the part, and it is but slightly humid.

The resolution of this state is slow, under the pressure of the pleuritic effusion. When it occurs, the affected part becomes less red, then changes into a pale violet, which latter becomes of a grayish colour; at the same time the vesicular texture of the lung reappears.

The resolution of peripneumonia under the influence of the pressure of fluid, in the stage of purulent infiltration, is very rare indeed. Laennec describes instances in which he had seen carnified portions of lung of a yellowish tint, in which the air cells were distinguishable, and appeared filled with semi-concreted pus.

Signs.—The complication of even a slight peripneumonia with an abundant pleuritic effusion, may generally be distinguished by the crepitating rhoncus, which usually occurs at the root of the lung, in the axilla, or a little below the clavicles.

This complication can hardly take place, except at the commencement of the disease, and when the effusion is not yet great; for when the lung is completely compressed, it is no longer susceptible of inflammation.

3. *Pleuritis and Peripneumonia of equal intensity.*

This conjunction is much less frequent than the two preceding cases. The pleurisy does not increase the danger of the peripneumonia; it even diminishes it, in moderating the inflammation by the compression of the effused fluid. On the other hand, the peripneumonia augments at first the danger of the pleurisy, which rarely threatens life at its acute period, and it renders the absorption of the fluid more rapid, and does not permit so great an accumulation of it as occurs in simple pleurisy; for this liquid is thrown out between two bodies, neither of which cedes to the

pressure exercised upon them—viz. the hardened lung on one side, and the firm thoracic parietes on the other. Laennec therefore infers that this form of pleuro-peripneumonia ought to be regarded as less dangerous than either simple pleurisy or peripneumonia.

Signs.—The re-union of the signs of pleurisy and peripneumonia renders these combinations easily determinable; many of their pathognomonic signs are even more permanent than in the simple, or uncombined affections; thus the rhoncus crepitans, and œgophony, often persist even to the period of convalescence. The latter sound is usually only apparent at the root of the lung, and in the vicinity of the inferior angle of the scapula; and from the presence of the large bronchial divisions, as well as from the density of the pulmonary tissue, it is rarely simple, but is generally accompanied by a loud and noisy bronchophony; it is in this case particularly that the united sounds imitate so perfectly the voice of *Punch*.

Treatment.—The treatment of pleuro-peripneumonia ought to be regulated according to the predominance of one or other of these diseases; it is therefore unnecessary, after what has already been said, to repeat what I have stated in speaking of the uncomplicated forms of the separate affections.

ACCIDENTAL PRODUCTIONS DEPOSITED IN THE PLEURA.

Laennec has divided these formations into three classes.

1. *Productions which develop themselves on the inner surface of the Pleura, ordinarily accompanied by liquid effusion.*

These are usually cancerous or tubercular deposits. The first generally offers the characters of medullary sarcoma, presenting masses of various sizes, but rarely, nevertheless, beyond that of an almond; they are strongly adherent to the pleura, which membrane is of an areolar redness around these deposits, for some distance; sometimes melanotic lines are seen to pass from the tumors to the surface of the pleura. The tumors are rarely numerous.

Tubercles are occasionally deposited in great numbers upon the surface of the membrane; they approximate closely, and are often united by a soft and semi-transparent false membrane, in which they seem at first imbedded. At a remoter period from their formation, this false membrane can no longer be found, because it is organized and united to the pleura; the tubercles are then very adherent, and appear implanted into the thickness of that membrane. Sometimes the tubercles are gray and semi-transparent, sometimes yellow and opaque, but they have not been seen softened. The interstices between them are generally reddened. In this state the pleura has the aspect of certain miliary eruptions on the skin; and in the midst of the redness lines of melanotic matter may be seen. Although tubercles are commonly first deposited in a false membrane, yet they may occur in the pleura without any signs of previous inflammation.

Small, white, opaque, and flattened granulations, of a firm and fibrous texture, are occasionally seen on the surface of the pleura; the membrane is then thickened.

These two productions are more commonly observed upon the peritoneum than the pleura; they are accompanied by effusion, which is generally sanguineous. Cancerous productions sometimes form an exception to this rule. The signs of effusion are of course apparent, but there are none of the organic causes which have occasioned it.

2. *Solid Productions.*

The pleura, instead of secreting its serosity, sometimes deposits tubercular or cancerous matters in large quantities, which accumulate and gradually compress the lung against the vertebral column, and thus fill up one side of the chest: these cases are very rare. Boerhaave found a white matter filling up one side of the chest of a patient; Corvisart mentions a similar case; Recamier found an enormous tubercular mass occupying the cavity of the pleura; Cayol and Laennec had each observed analogous instances. Haller appears also to have met with a considerable mass of softened melanosis in the same situation.

3. *Accidental Productions developed between the adherent surface of the Pleura and the neighbouring parts.*

Medullary sarcoma and tubercles, imperfect or petrous ossific deposits, and large cartilaginous incrustations, have occasionally been found in this situation. Haller and Dupuytren have described large cysts, placed between the pleura and the intercostal muscles, filling almost entirely the pleuritic cavity, and compressing the lungs.

DIAPHRAGMATIC INTESTINAL HERNIA.

A wound, a rupture from a fall, or a malconformation of the diaphragm, may occasion an opening sufficiently large to admit a portion of the intestines, or even the stomach, into the cavity of the chest. Herniæ of this kind could only be distinguished by the absence of the respiratory murmur at the points of the chest corresponding to the position occupied by these viscera, and by the borborygmata which might be heard in the same situations.

The lungs have been seen forming herniæ through the intercostal muscles.—Gratelonp mentions one produced by a violent cough; Boerhaave speaks of another, produced by the efforts of accouchement; Sabatier a third, which appeared after the cicatrization of a bayonet wound between the fifth and sixth ribs; Richter gives a fourth instance; and two cases have lately been observed at Paris.

The respiratory murmur would be most distinctly heard in tumors of this kind, by which their nature could easily be determined.

OBSERVATIONS ON THE PATHOLOGY OF NERVES.

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[Continued from page 652.]

More unexceptionable instances of the effect of inflammation, the result of extension of disease, will be found in Mr. Swan's chapter upon ulceration of nerves. In the first case, that of William Sharpe, he suffered such violent pain in the thigh and leg, as far as the ankle, that he wished to have the limb amputated. The ulcer was upon the tibia, and the only nerve ulcerated was the dorsal branch of the peroneal; yet the pain was by no means confined to the parts upon which this nerve was distributed. All the other nerves of the leg were implicated: "the sciatic nerve was very much enlarged, but many of its branches more so in proportion," and "varicose veins were observed in several parts" of it. "Some of the nerves were unusually soft, and easily torn." "The branch of the anterior crural nerve, accompanying the saphena vein, was somewhat enlarged; about an inch and a half above the ulcer it was still larger, and it was nearly surrounded by the ulcer, and at the upper part of this was firmly united to the adjacent parts for an inch and a half." "The peroneal nerve was very much enlarged, and the anterior tibial and dorsal branch of the peroneal were nearly twice the size they are in a healthy limb." "The anterior tibial nerve was enlarged, and proceeded firmly united all the way to surrounding parts." "The long cutaneous branch of the peroneal nerve was very much enlarged." "The posterior tibial, at the upper part, was larger than natural, but towards the bottom of the leg was still larger, and continued so until it had got beyond the inner ankle." Those who consider the extent to which the nerves of this limb were inflamed, will cease to wonder that the patient's sufferings were so excruciating as to make him wish to have the limb amputated before his surgeon was disposed to accede to his request; and the case is an admirable illustration of the extent to which inflammation occasionally extends in the course of the nerves, both upwards towards the sensorium, as well as in the direction of their remote distribution.

In the second case, one of fungous ulcer in the lower part, and chiefly on the outside, of the left leg, the patient had suffered excruciating pain, which darted down to each side of the ankle and top of the foot. The pain she experienced was continual, but became the most violent in the night, and generally about the time she was going to sleep. Mr. Swan introduces this case by stating, that "although the nerves were not exactly ulcerated, yet they were so connected with the diseased parts, and many branches from them were distributed in such a manner to the fungus, as to occasion the same symptoms." This is a virtual admission that the phenomena were those of inflammation, not the result of ulceration. The symptoms were common to both cases, and must have arisen from a cause common to both. But ulceration existed only in one, inflammation in both; and it is impossible, therefore, not to infer, that the pain this woman experienced was the consequence of inflammation, not of ulceration. Accordingly, upon dissection of the amputated limb, "the peroneal nerve was found much larger in the lower part of the ham than it was higher up. Its long cutaneous branch was blended with the posterior part of the fungus, and was then so much enlarged and confused as not to appear like nerve; but beyond the fungus had again its natural appearance. The anterior tibial, near the fungus, was "covered by a firm and very vascular membrane, from which it could hardly be separated. This was the case most of the way through the fungus, after which

it had a more natural appearance." "The dorsal branch of the peroneal nerve could, in the same manner, be traced to the fungus, when it exhibited nearly the same appearances as the anterior tibial. Just at the beginning of the fungus it gave off to its base many filaments, which were very much enlarged."

A third case is related by Mr. Swan, of a large ulcer on the left leg, with exuberant granulations, which bled profusely, attended with excruciating pain, which hardly ever allowed the patient to rest; and it was so bad at night as to oblige him to get out of bed. The pain came on with violent stabs, like spasms, which extended up the outside of the leg to the ham, and from thence to the back; and in these paroxysms the limb would frequently be moved involuntarily. The pain was almost entirely confined to the peroneal nerve, for when pressed in the ham, it produced or aggravated the violent pain. A portion of the peroneal nerve, near the outer hamstring, was removed by excision, when an artery bled freely, but ceased without the application of a ligature. "The pain in the ulcer ceased, and he had no feeling when the upper part of the foot was touched." But the day after the operation there was pain in the wound, and there was perfect sensation in the upper part of the foot. The discharge of pus and blood ceased after the operation, but "he never had any of the spasms in the limb, or any of the violent pain which followed the course of the sciatic nerve, and caused so much suffering;" "but he still at times suffered pain from the connexion of the saphenus nerve with the ulcer." In about six weeks after, amputation became necessary, in consequence of the extent of caries of the tibia, attended with diarrhœa and night sweats, under which his health appeared to decline. Upon examination of the limb, it appeared that the saphenus nerve "was very much enlarged, and was connected with the ulcer. The sciatic nerve was enlarged." "The peroneal nerve was also enlarged, and at the place where it had been divided was much thickened; and one new branch went from this part to the anterior tibial nerve. New branches went from the same portion of the divided nerve to the dorsal branch and the surrounding parts. Both the anterior tibial nerve and the dorsal branch were larger than in their natural state." The state of the nerves thus discovered upon dissection explains satisfactorily the symptoms. Until the communication with the sciatic nerve was cut off by the division and excision of a portion of the peroneal, irritation, perhaps inflammation, crept upwards along that nerve, so as to affect even its motor branches; but upon its separation from the source of irritation, the evil consequences were intercepted. On the day succeeding the operation there was no pain in the ulcer, but there was "a little in the wound:" this continued on the following day; and on the third day after the exeision of the nerve the ulcer is reported to have been again painful. This pain could hardly have resulted from the connexion of the saphenus nerve with the ulcer, since that nerve must have been equally affected on the day of the operation, and the two succeeding days; it was probably the result of inflammation having occurred at the upper extremity of the divided nerve; for the wound had been painful for two days, and even a fortnight, before the amputation of the limb. On pressing the part where the nerve was divided, the patient said he felt it quite down his leg. But as the continuity of the nerve was destroyed, the limb, as far as that nerve was concerned, was as if it had not existed; and the pain which returned in the ulcer was probably to be referred to the same principle as that in an amputated limb, in which Haller states that an individual can hardly divest his mind of the idea that he is bending the joints of the separated member. The question as to the existence of new branches, and of their influence in this case in conveying the nervous influence, rendered defective by the operation of dividing the peroneal nerve, I leave to those more versed in these matters than myself. Mr. Swan himself is not altogether confident in his own opinions upon the point, and his account, therefore, of such new nerves requires confirmation. Is it not possible, or even probable, that these supposed new branches may have been some of those minute filaments which, from their extreme tenuity in a natural state, escape the observation of the anatomist, but partaking of the inflammation of the trunks with which they communicate, may have become indurated and enlarged, and consequently capable of be-

ing traced? just as in some parts and surfaces of the body, there are vessels so small in their natural condition as not to admit the red particles of the blood, and are therefore impereeptible; and yet they become abundantly obvious when, from simple congestion, or from inflammation, red blood is forced into and distends them. This is, indeed, but a conjecture, or at best an argument from analogy; but no one has yet discovered the ultimate fibril of a nerve, or even traced it, exeepting perhaps in the optic nerve, to that point where, divesting itself of its neurilematous investiture, it begins to dilate, as some suppose, into a pulpy expansion, to become the seat of sensation.

There is in the last edition of Sir Benjamin Brodie's work "On the Diseases of the Joints," an interesting case, in which the distention, or stretching, of some filaments of lumbar nerves by subjacent glands is supposed to have modified the symptoms of a diseased hip-joint. "One evening after the application of leeches he had a paroxysm of violent pain, attended with spasmodic action of the muscles of the thigh. The pain during this attack was so excruciating, that, to use his own expression, 'he wished for immediate death.' From this time, however, he was never wholly free from pain, and he was also liable to repeated attacks of more intense suffering, attended with violent spasms of the muscles of the thigh. The slightest motion of the limb induced one of these attacks of spasm, during which the thigh was jerked in a most remarkable manner." It is scarcely necessary, after what I have already advanced, to state that these are precisely the phenomena which arise from inflammation of nerves. The symptoms are to be referred principally to those branches of the anterior crural nerve which supply the great muscles of the thigh; for the thigh was apparently affected to the exclusion of the leg. There had been inflammation, with "a collection of thin pus amongst the muscles on the anterior part of the thigh, below the hip-joint, but communicating with it. The tumor thus formed was of the size of a large orange, and being situated under the femoral artery, the latter was thereby raised out of its natural situation. There were two enlarged lymphatic glands, each of the size of a walnut, immediately below the crural arch on the fore part of the joint, and these lay in contact with, and immediately behind, two branches of the lumbar nerves, so as to keep the latter upon the stretch, like the strings passing over the bridge of a violin. This last-mentioned circumstance seemed to afford a reasonable explanation of the spasmodic affection to which the patient had been liable, and which probably had become relieved in consequence of some degree of diminution in the size of the glands after the escape of the abscess from the joint."

Several considerations lead me to doubt the accuracy of this explanation, which is not given with any great confidence by the author himself. He offers it only as probable and plausible, not as conclusively established. It may be objected, first, that it is no unfrequent occurrence for the whole of the glands to which allusion has been made to be immensely enlarged, and of a stony hardness, from cancerous ulceration of the os uteri and upper part of the vagina. They may be seen as well as felt, and often implicate the whole chain of lumbar glands also, and yet it has never chanced to me in any one of these cases, which my connexion with the Middlesex Hospital has given me repeated opportunities of examining, to witness similar extraordinary jerkings of the limb, though I have not unfrequently found the cutaneous branches of the upper part of the thigh implicated, so as to produce pains of neuralgic character; and not uncommonly have I observed, in similar cases, considerable numbness, with imperfect movement of the thigh. 2dly, If the pain and convulsive movements arose from any influence upon these nerves, it must have been because they constituted part of those bundles which go to the formation of the anterior crural nerve, all the branches of which should have been similarly affected. The leg below the knee would hardly have escaped. But 3dly, The nerves which passed over the glands situated near the joint, were more probably mere cutaneous branches, and neuralgia without muscular spasm would have occurred if these had partaken of the inflammatory disease of the neighbourhood; or if simply stretched by elevation, diminished sensibility would have been the more probable result. 4thly, There was much suppurative inflammation, of an unhealthy character, amongst the muscles which the branches

of the anterior crural nerve supply with nervous energy; these, surrounded by parts undergoing inflammation, would probably partake of that morbid condition; and this is rendered more probable by the observations of Sir Charles Bell and Mr. Swan, both of whom have seen nerves contiguous to disease of joints, or of other organs, becoming inflamed, and producing the symptoms and changes of texture consequent upon inflammation. "It was but the other evening that a gentleman complained to me of a pain and numbness of the back of the thumb and fore-finger; this I found referable to a disease of the elbow-joint, and an affection of the muscular spiral nerve. I visited a woman with a disease of the womb, who complained of an unusual pain and frequent spasms of the leg. I imagined that the disease had involved the sacro-ischiatic nerve, and *found it so on dissection**." "The nerves contiguous to a diseased joint are apt to become enlarged. In one case of scrofulous disease of the elbow-joint much pain had been experienced. The ulnar nerve was very much thickened and enlarged as it passed behind the internal condyle of the arm-bone; the median nerve was also enlarged, but not in the same degree†." Since, then, in Sir Benjamin Brodie's case there was disease of the joint, around which nerves are apt to become inflamed; since the motor filaments must have been surrounded in their course by the collection of thin pus amongst the muscles affected; and since the symptoms were those of inflamed nerve, I think it more probable, upon the whole, that the pain and jerkings of the limb were rather from inflammation than simple stretching; and it appears to me a valuable illustration of the extension of an inflammatory affection from surrounding parts to a nerve in their vicinity.

But this view of the case by no means diminishes its interest. It equally "shews to what extent the symptoms may be modified and aggravated by an accidental circumstance;" the consequences, whether the result of stretching or of inflammation, being any thing but trivial.

Another curious instance of the extension of inflammation from contiguous parts to a particular nerve, will be found in the Transactions of the Medical Society of London, by the late Mr. Norris, surgeon to the Charter-house,—the subject of which was his apology, as it must be mine, for giving the most characteristic details in Latin, rather than in the vernacular tongue. The nerve which appears to have been affected was the internal pudic, and the symptoms which presented themselves those of ungovernable satyriasis. This vigorous gentleman, *sixty years of age*, "nunquam meminit se in venerem propensiorem fuisse, nedum insana et insatiabili libidine permotum ante hos duos menses, quando se diro hoc et teterrimo correptum esse morbo sentit; cujus vis tanta est et tam effrænata ut expleri nequeat; et ad coitum cum uxore se singula nocte quindecies saltem, imo vicies nonnunquam impellat." As might be expected, the evils of such a state were not confined to the patient himself; Mr. Norris therefore begged to be allowed "cum uxore colloqui. Imo inquit, id ipsa summopere vult quippe admodum invalida tuique indiga consilii. Eo visum et reperio feminam matronali pudicitia et gravitate decoram quæ omnia dudum a marito narrata amplissimo testimonio comprobavit, adjecitque se propter noctes continuo insomnes et inquietas multa lassitudine, et propter vim sibi toties oblatam pudenda sibi tumore et dolore affligi. Cum de constanti in coitu immissione seminis rogarem, fidem fecit, virum omnia vere dixisse; nunquam enim aliter ab illo rem actam fuisse. Quibus verbis ei facilius et libentius credidi quod mulierem bis nuptam, et ex utroque marito bis matrem experientia satis hæc edocuerat*." The cause of these extraordinary symptoms was a tumor from a blow upon the perineum, which increasing, and at length becoming softer, was opened by incision, and gave vent to an abundant discharge of a glutinous and sanious character, a short time after which the symptoms vanished, and the wound healed kindly. This is, indeed, a rare sequence of inflammation and abscess of the perineum; and the peculiar results appear to me to be explicable upon no other supposition than that the internal pudic nerve, which ministers to an office of great animal gratification, and which supplies

* Operative Surgery, vol. ii. p. 330.
† Swan, p. 65.

* Trans. of the Med. Soc. of London, vol. i. part i. page 174.

certain erector muscles and other contiguous sensitive parts, had become implicated in the surrounding inflammation, and produced, in the language of modern physiologists and pathologists, an exaltation or exaggeration of function.

Some, perhaps, may fancy in these instances that the mere acrid products of inflammation, like certain chemical agents, may have irritated the nerve by contact; as in the numerous experiments with concentrated mineral acids, or, according to Haller, as in the mere application of a cold sponge. An observation, however, of Bichat, upon this point, may be taken as at least an approximation to evidence that this is not sufficient. After stating that sensibility depends rather upon the medullary fibre than upon the neurilema, whose office it is to protect the medullary matter, he adds, "hence it is that simple contact without compression is very little painful; and that a nerve may almost with impunity be bathed in a purulent ichorous fluid, and even in the sanies of cancer."

Amongst other causes of inflammation of a nerve, pressure ought not to be excluded. Numerous instances are upon record in which such connexion has been traced; and hence many who have discovered tumors situated in the course of nerves, attended with suffering, have adopted the conclusion, that compression of a healthy nerve will occasion pain. The recorded cases, however, when minutely examined and faithfully related, do not appear to warrant this inference; for in the majority of such instances, subsequent dissection has shewn even extensive disorganization of the nerve itself. Of this Morgagni has related two very interesting instances. In one, that of a man fifty years of age, an aneurism first made its appearance in the groin, and increasing gradually, became attended with considerable pain and œdema. During the last month, the pain had been excruciating, not only in the tumor, but often below the inner ankle, the rest of the foot having lost all sense and motion. It was found, on examining the body, that the aneurism, extending to the great sciatic nerve, had so eroded it that very few (vix paucæ) fibres remained to connect the upper with the lower part. Morgagni gives an accurate explanation of the symptoms, founded on dissection. After the distended vessel, he says, had given way, and formed a spurious aneurism, the clots pressing upon the veins impeded the return of blood, and œdema was the consequence. These also forcibly separating the muscular fibres and their nervous filaments from each other, occasioned a pain, which was, however, much more bearable than that which subsequently occurred when the nerve *began* to be eroded. At length, when the nerve which communicated the faculties of sense and motion to the foot was almost entirely eroded (exesus), both these faculties were lost, excepting under the inner ankle, which part derives its nerves not only from the posterior crural, but also from that branch of the anterior crural nerve which accompanies the saphena vein. Hence, Morgagni adds, an aneurism may destroy life not only by bursting, but also by the agonizing sufferings (per acerbissimos cruciatus) which it may induce.

The other case was one of popliteal aneurism, of the size at least of a small melon, which produced most excruciating suffering in the limb. The patient died of sphacelus, followed by hæmorrhage. Along the whole trunk of the aneurism was a cavity full of grumous blood and matter, the nerve and vein being completely eroded, as were also the condyles of the femur and the head of the fibula.

A similar instance occurred to Guattani of popliteal aneurism attended with violent pain, in which the nerve had been much changed in its course and character, and was probably glued to the surface of the tumor by an inflammatory process; and in the valuable paper upon malignant tumors by Mr. Travers, is a case of tumor, situated in the ham, and producing very severe suffering, which the author was disposed to ascribe to "the obvious circumstance of pressure;" but the details of which case force conviction upon my mind that the nerves had become inflamed.

Occasionally the symptoms mark the existence of inflammation of nerves; and yet we can trace none of the causes which I have enumerated, or any other, to account for its occurrence, and we are then driven to the conclusion that it is an idiopathic disease. M. Descot represents this as an extremely rare disease, but still its existence has been very satisfactorily ascertained. The more superficial nerves of the extremities are the most common seat of the

disease, which would seem to afford countenance to the opinion that the principal cause is exposure to cold. Hence it is by no means uncommon in the sciatic nerve, in which, in the opinion of M. Descot, a great many cases of ischias have their seat. "Dans beaucoup de cas de sciatique, je crois que le nerf sciatique est le siége de la maladie; la douleur suit, en général, si exactement le trajet du nerf, et les parties voisines sont tellement libres de toute apparence pathologique, que je crois que le nerf seul est le siége de la douleur; et l'affection, ce me semble, doit naître d'une action inflammatoire dans le néurilème, laquelle se termine souvent par l'epanchement d'un fluide séreux *."

In the absence of all evidence of the existence of any local cause, it may be safely inferred that one of the cases related by Mr. Earle was of this kind. This patient laboured under the symptoms of inflamed ulnar nerve, the whole of which, in its course from the elbow downwards, was morbidly sensible when touched: "the mere drawing on of a glove would sometimes cause so much pain as to make her scream and fall to the ground." The pain at times occurred spontaneously, without any apparent exciting cause. The integuments on the inside of the forearm near the elbow were hotter and fuller than natural. The symptoms were removed by excision of a portion, equal to rather more than an inch, of the nerve, when it was found upon examination that "the neurilema covering the nerve appeared thicker and firmer than natural." These appearances were incontestibly the consequence of inflammation, no cause for which could be ascertained, for "she was unable to account for the origin of the complaint, and said that it had been gradually increasing for some months."

In the instance also quoted by Dr. Cooke from a manuscript communication to him by Sir Charles Bell, inflammation had occurred spontaneously in the ulnar and fibular nerves, and the pain, which was of a most agonizing kind, had confined the patient for two years, and "had quite subdued a powerful frame." The existence of inflammation was proved by the tender state of these nerves, which throughout their course were acutely sensible to the slightest pressure, by the periodical and alternate accessions of pain, and by the effect of remedies; for the disease yielded to measures the principal of which consisted in repeated purging, and the application of leeches along the course of the nerves.

Tumors occasionally form within the substance of nerves, and produce, generally, well-marked symptoms of excitement. These tumors vary in situation, in size, in form, and in texture. They may exist in nerves in the interior of the cavities of the body, or in those of the extremities—the latter, however, being by far the most frequent; and in both they occasion the phenomena of excitement—convulsive movement, if a motor nerve; severe neuralgia, if a nerve of sensation; the combination of the two if a symmetrical or compound nerve, before it has exhausted its muscular filaments. A striking example of the effect of such tumor imbedded in an internal and simple motor nerve will be found in a case which occurred to M. Berard, âiné. The phrenic nerve of the right side appeared interrupted by a tubercle as large as a pea, scirrhous and blackish, and had produced asthma *,—obviously implying a convulsive action of the diaphragm. Instances of similar tumors in the nerves of the extremities are by no means uncommon; and upon this branch of his subject M. Descot has shown great industry, research, and judgment, and has at the same time done ample justice to the British records of medicine and of surgery, from which he has derived a large proportion of his illustrations.

These tumors commonly form upon sentient filaments of cutaneous nerves before they terminate in the cutaneous tissue for the purpose of conveying impressions from the surface, and are consequently generally found in the upper and lower extremities. M. Marjolin, however, communicated a case to Descot, in which they appeared at all events very near to the sentient extremities of the scrotal nerves. There were in the cellular tissue of the scrotum "many small, lenticular, smooth, moveable, hard, and insulated bodies, compression of which between the fingers produced pains like those which the patient habitually experienced †." A

* Descot, p. 200.

* Journ. Hebdom. tome ii. p. 73.—See also Descot, p. 257.

† "Douleurs vives, lancinantes, intermittentes."—Descot, op. cit. p. 245.

trifling incision upon each enabled M. Marjolin to remove them all; they weighed a few grains each, and were of a fibro-cartilaginous texture. The sufferings of the patient ceased altogether from the period of the operation.

They are sometimes very small, as in the disease so accurately described by Mr. Wood under the denomination of painful subcutaneous tubercle, of which he has recorded five instances occurring within his observation, and others communicated to him by his professional friends, amounting altogether to eight cases, all of which yielded to extirpation of the tumor *. The disease, however, had been noticed by others before his time, and amongst them by Cheselden †, Camper‡, Portal§, Bisset‖, and Pearson¶.

Mr. Wood has offered no explanation of the pathological nature of this disease, but Mr. Windsor has supplied the difficiency by tracing the filament of a nerve into the substance of the tubercle**. Mr. John Pearson also saw at the upper extremity of a slough, which he had produced by an escharotic applied for the purpose of extirpating the tubercle, the ragged extremity of a nerve, as well as the saphena vein; thus proving incontestibly that the nerve is at least essentially implicated, and is probably the matrix of the tumor.

These small tumors are generally found in cutaneous branches; and the excruciating pains of neuralgia are the common, if not the invariable, consequence. In some, with this violent pain have been combined muscular spasms of the limb, and even sometimes general epileptic convulsions; but I know of no instance in which paralysis was observed.

OPIUM IN DELIRIUM TREMENS.

To the Editor of the Medical Gazette.

Sir,

Although no medical practitioner can doubt the efficacy of opium in delirium tremens, a case very illustrative of its specific power in that affection having recently occurred to me, I transcribe it for your pages, leaving it to your option to insert or reject it.—I am, sir,

Your obedient servant,

J. C. Badeley, M.D.

Chelmsford, Jan. 30, 1835.

Mr. A——, ætat. 45, a farmer of property and respectability in this neighbourhood, in the habit of unrestrained conviviality, and for the last few days preceding his attack more intemperate than usual, evinced, on Saturday, the 28th ult., symptoms of delirium: he awoke in the night with the apprehension that his stacks were on fire, got up, dressed himself, and went into his farmyard under that delusion, which was not removed by visiting them. He remained in that false conviction the whole of Sunday, riding about to procure men to extinguish the flames, talking very incoherently, and evincing great general excitement; got no sleep on the Sunday night, and his friends being alarmed at his condition, sent for Mr. Barlow, of Writtle. The impression of fire was still so strong on his mind, that he insisted on Mr. Barlow's accompanying him to see the blaze, and took him into the yard; and it was in vain that Mr. Barlow attempted to convince him to the contrary. At this time there was a general tremor of the whole system; great anxiety; pulse very quick; tongue clean; restlessness, and general apprehension. Mr. Barlow immediately gave him two grains of opium, and ordered that dose to be repeated every three hours, till sleep should be induced. After the fourth dose he slept for two hours, after which he awoke with great oppression of breath, and severe pain in the head. Mr. Barlow reached him at two in the morning, and found him as wild as ever: skin dry; pulse very full; tongue furred, and considerable thirst. Mr. Barlow bled him, and after losing ℥xij. the pulse fell, and he expressed great relief. He then gave him two grains of opium, ordering it to be repeated every six hours, and ℥ss. of Battley's liquor opii sedativus every three hours after each pill. Mr. A. continued these pills and draughts regularly till the Tuesday night, but refused to keep his bed, and continued as wild, and as full of strange fancies, as before.

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* Edin. Med. and Phys. Journ. vol. 8.
† Anat. of Human Body, Ed. 1792, p. 136.
‡ Demonstr. Anat. Path. l. i. p. 11.
§ Anat. Med. vol. iv. p. 246.
‖ Mem. of Med. Soc. vol. iii.
¶ Med. Facts and Obs. vol. vi.
** Edin. Med. and Phys. Journ. vol. xvii. p. 262.

After taking five doses he was, however, put to bed, and fell asleep for three hours; he then awoke as agitated as ever, and under apprehension that he was going to be murdered. Mr. Barlow now gave him a pill, containing one and a half grain of the muriate of morphia; no sleep followed, but he was drowsy, and more tranquil. In three hours another pill, containing one and a half grain of the muriate of morphia, was given, after which he dozed a little; but at 8 A.M. started up, dressed, and ran across the fields for nearly a mile and a half, leaping hedges and ditches, and crying murder! It appears that he had made his will on Thursday night, under the impression that his life was in danger, and had actually taken his pocket-book from his desk, with a considerable sum of money in it, which he said was to bribe the murderers to spare his life in case they caught him. As the disease continued unabated on Wednesday, January 1st, I was requested to visit him immediately. He met me on my entering the house; appeared much agitated, and very apprehensive of murderers; told me that he saw them lurking about his premises, that his stacks were still on fire, and other such nonsense. I found him tremulous; pulse frequent; tongue white, dry, and coated; pupils of the eye contracted; skin rather relaxed; he had scarcely made any water, and his bowels had not been relieved since the Sunday. I gave him a large table spoonful of castor oil immediately, and ordered it to be repeated in three hours if necessary. As soon as the bowels had acted, I prescribed a pill, containing four grains of opium, to be taken, and this dose to be repeated every three hours till sleep followed. On Thursday I found that he had taken eight grains of opium, and ʒiss. of liq. opii sedativus, since my visit; he slept none after the first pill, but fell asleep for four hours soon after taking the second, and awoke tolerably sensible. At eight this morning he still rather apprehended murder, but got up, ate some breakfast, and became more composed; his tongue was much cleaner; pulse very weak; bowels open; water scanty; but he still looked wild, though he talked rationally. I ordered the following draught:—

℞ Ammoniæ Carbon. gr. v.; Liquoris Opii Sedativ. ɱv.; Sp. Juniperi, ʒj.; Mist. Camphoræ, ʒxj. M. ft. haustus 4ta quaque hora sumend. et rep. Pil. Opii, gr. iv. si rediret Delirium.

Friday.—Had slept tolerably, but now appeared a little more wild; said he would go to a relation's, a few miles off: his friends had no control over him. I immediately gave him (11 A.M.) two grains of opium, and ordered it to be repeated if neeessary: he was quieter, but being still rather wild, the other pill was taken at three, after which he ate some beef, and drank some gin and water.

℞ Hydrarg. Submur. gr. iij.; Opii, gr. ij. Fiat Pilula hora. 10 P.M. sumenda.

Rep. Haust. jamjam prescript. 4ta quaque hora.

Saturday.—Much better; took the calomel and opium pill, after which he slept till three this morning; took a draught, and slept again till five; awoke sensible, and soon fell asleep again till nine this morning, when he awoke quite calm and rational, took another draught, after which he rose, breakfasted, and went out. He now appears much as usual, but his tongue is white; bowels confined; stomach feels uncomfortable, together with nausea; pulse 64; says his head feels light.

℞ Infusi. Sennæ, ʒivss.; Tinct. Jalapæ, ʒj.; Syr. Zingib. ʒij. M. sumat Coch. iij. statim, et rep. 3ta quaque hora donec responderit alons.

Perstet in usu haust. ut antea et sumat. Opii, gr. iij. si rediret Delirium.

Sunday.—His bowels had been relieved; had passed a quiet night; all his delusion at an end, and felt much as usual, excepting being a little weak. I ordered a few draughts, with ammonia and bitter infusion, omitting the opiate; under which treatment he entirely recovered, and has had no relapse.

The delusion returning after he awoke from two or three hours' sleep, is probably owing to its not being of suffieient duration to renovate the nervous system; for when it continues uninterrupted for twelve or fourteen hours, the patient generally awakes unconseious of what has occurred.

TWO CASES OF PERITONITIS;

WITH REMARKS.

To the Editor of the Medical Gazette.

SIR,

I FORWARD you the accompanying cases; if you deem them of sufficient interest for publication, you will oblige me by their insertion in the Medical Gazette.

I am, sir,
Your obedient servant,
JOHN BADHAM, M.D.

Worksop, Notts,
Feb. 4, 1835.

CASE I.—Ann Frost, aged seven, a child who had previously enjoyed good health, was suddenly seized, on the 2d of January, and four days prior to my seeing her, with violent fixed pain in the abdomen, great tenderness on pressure, and considerable tension of the belly, with frequent vomitings, quick small pulse, and, in a word, all the symptoms of acute peritoneal inflammation. When called in by my friend Mr. Beadsale, I found the patient very restless; indeed, she had been remarkably so from the commencement of her attack: the tongue, which was dry, presented a broad chocolate-coloured stripe down its centre; the other physical symptoms (which so frequently happen in this disease) were only moderate: though the pulse beat 120 in the minute, the abdomen continued exquisitely intolerant of pressure, as it was before recourse had been had to those active means opposed by Mr. B. to remove it. The breathing, though thoracic in its character, seemed (probably from sympathy merely), hurried and uneasy; perpetual retchings, with ineffectual attempts at vomiting, were very prominent; and among the most distressing of the symptoms presented to us, the urine was scanty, without being very high coloured. The sensorium was not in the least implicated. Frequent picking of the nose constituted in this, as in the succeeding case, a characteristic peculiarity. Lastly, there was a clanging harsh cough, without expectoration. The stethoscopic indications were such as one would have expected—viz. puerile respiration; and in one or two places the râles sibilants or sonores were heard. I gave an unfavourable prognosis as to the issue of the case, which seemed already beyond the control of medicine; however, as general blood-letting seemed out of the question, I ordered leeches to the abdomen, and the bleeding to be encouraged if practicable, and prescribed calomel every four hours, once in combination with opium. One or two doses of castor oil were likewise given, and which the stomach at last retained. The bowels were obstinately bound from the beginning, and were not satisfactorily cleared throughout the disease. The abdomen was blistered, and then treated with warm poultices and fomentations over the seat of pain, &c.; but notwithstanding all that could be done, the child was evidently sinking: the disease had taken so firm a hold, that it appeared only to relax its grasp as the power of manifesting suffering was by degrees withdrawn from its victim, who lingered out a few hours, to die (apparently from extreme exhaustion), on the sixth day after the attack, or on the second of my attendance.

Sectio cadaveris.—The autopsy took place twenty-four hours after death. The first thing observed on making an incision and laying open the abdominal parietes, was a quantity of pus of that kind which issues from the cellular membrane in phlegmon—thick, matured, and pure, but neither sanguinolent nor containing any shreds of membrane—in quantity sufficient to bathe all the abdominal viscera, particularly such of them as lay to the right side of the body. Our first care was to examine very attentively the condition of the peritoneum, which, after a most careful survey, we were surprised to find perfectly healthy. There was, indeed, one small cake of coagulated lymph thrown out on the convex surface of the liver, of the size of a crown piece; but excepting this, there was not so much as the slightest adhesion between any of the contiguous portions of its surface. We next turned our attention to the state of the intestines, and here again we found nothing to explain the effusion. Externally the bowels presented a pale appearance (the peritoneum throughout presented the same exsanguine condition); and on slitting them up, so as to expose the mucous membrane, it was found scarcely more coloured than the serous membrane which invested them. It was neither hardened, thickened, softened, or ulcerated, nor in any other

way changed in structure, or unlike in appearance to its natural and healthy structure. The bladder was empty, but healthy; and the parenchymatous organs, severally examined, offered no trace of disease. The lungs presented nothing worthy of remark. The gall-bladder was distended with bile. The head was not examined.

Case II.—Three days only elapsed when my advice was again requested to attend another member of the same family, a younger brother of the deceased. This child, who was six years old, and had, to the moment of his attack, been in rude health, was seized on a sudden, while at play, with sickness and a violent pain in his belly. The parents instantly took the alarm, and sent for medical aid. I saw him a few hours afterwards; the pulse was then considerably quickened, but slight heat of skin or febrile excitement; the tongue was moist, and covered with a creamy coat; the eye was bright and watery; the tenderness of the abdomen exquisite; there was incessant picking of the nose; no cough; but all other symptoms were precisely of a kind with the last. This case was likewise treated *more majorum* with bleeding, mercury, saline and other medicines, as particular symptoms seemed to point out the expediency of their exhibition. The medicines were retained generally; and on the morning of the 9th of January, the third from the attack, the urgency of the symptoms had all abated, and I began to entertain hopes of a favourable issue to the case. On the morning of the 10th this pleasant state of things continued; a blister which I had ordered to the abdomen had risen well, and the pulse had lost its thrill and become soft; the bowels were several times relieved, and the urine was more free. The day passed flatteringly, but in the middle of the night (I had given him a powder of hydr. c. creta, with pulvis ipecacuan. co. at bed time), he became alarmingly worse; and when I saw him next morning, the hand of death was upon him. The features had collapsed; the eyes were fixed; tongue dry; abdominal tenderness nearly gone. He appeared now to suffer very little, and died without a struggle on the morning of the 11th.

Sectio cadaveris. — The inspection took place eight hours after death. The peritoneum, throughout the whole of its extent, presented not a vestige of disease. On slitting up the intestines, the mucous membrane was found as healthy as the serous; there was, indeed, a slight red arborescence in one or two portions of the canal, chiefly in the jejunum; but this appearance was not more than might fairly be ascribed to the stimulating effects of aperient medicines so largely exhibited; for, as I have remarked in the former case, the bowels were very torpid in their action, and depraved in the quality of the secretions, being likened to tar. The parenchymatous organs, as in the last case, were all healthy; there were slight adhesions between the pleura of the right lung and the pleura costalis; the right lung itself was slightly congested, but it freely crepitated between the fingers; the left lung and its enveloping membranes quite healthy. There was no other trace of disease. The head was not examined.

Remarks.—The above cases are interesting in several points of view; and when duly weighed, afford to the intelligent pathologist some very interesting materials for his speculations. There is one circumstance, however, to which at present I would particularly direct the reader's attention; — I mean the striking similarity of symptoms in the two cases, with the remarkable discrepancy of appearances revealed to us after death. From such apparent clashing of evidence, what are we entitled to conclude? Assuming that there had been an inflammation in the neighbourhood of the peritoneum in either case (for what else but an inflammation could have produced the symptoms?) is it to be believed that it should have conducted to such a diversity of result—in the one case to a large effusion of pus, in the other to no effusion of any sort? When two young subjects of similar predispositions, and so far of similar idiosyncrasies, are both attacked with acute inflammation, when the seat of the inflammation is the same, when the symptoms are not different, and when we observe the same tendencies, followed by the same fatal termination, can we suppose the different appearances revealed after such terminations are severally ascribable to some difference in the kind of inflammation set up? In short, are these different kinds of inflammation? Is there not something almost contradictory in the very terms of this ques-

tion? All disease is action; and how can an action be one and many at the same time? Can unity be divided into multiplicity? If the pus really were the product of pure inflammatory action in the first case, and not rather, as my brother, Dr. David Badham, supposes, of an engrafted morbid action on natural active inflammation, why was it not produced in like manner in the second? Was the inflammation not high enough? It destroyed life. Was it too high? Then why did it not end in gangrene, or some other change of structure? Was it modified by tissue? The affected tissues were the same. By difference of cause? The same general cause produced both diseases. By difference of constitution, then? As far as we can see, the constitution of the parties was very similar. Inflammation may end in death (it did so here), as it might have ended in resolution; but can it properly be said ever to terminate in any morbid secretion or organic change? I leave the question to the consideration of the intelligent reader: it is sufficient to have suggested it here. Some have denied that serous membranes can inflame; they suppose the inflammation to be round and about, but not in, the substance of these membranes. This is a speculation which, from the absence of all those phenomena so constantly attendant upon, if not immediately associated with, inflammation, may be not irrationally entertained in the present case.

DIAGNOSIS BY AUSCULTATION IN SURGICAL CASES.

To the Editor of the Medical Gazette.

Sir,

That a gentleman of such reputation as a surgeon and physiologist as Sir Charles Bell, with whom the discovery of truth, for the sake of truth alone, should naturally be the actuating principle—that one who ranks so high among the scientific and philosophic of his liberal profession, should allow himself to give utterance to such expressions as are attributed to him in your journal of the 17th instant, concerning the value of auscultation and percussion, is to be regretted. As it was before a body of students, a large proportion of whom would most probably be unable from inexperience to form an opinion for themselves on this important subject, and to whom, consequently, the *dictum* of so renowned a preceptor would be law itself, renders it a subject of especial regret.

The case was one of aneurism of the arch of the aorta—the nature of which was only discovered on the post-mortem examination. Because, it seems, the physical indications of aneurism were not in this case detected, it is made a peg on which to hang a sweeping charge against auscultation, with reference not merely to this class of diseases, but those in general to which it is applied; and we are told that "this would imply (*i. e.* the evidence of this case, and the candid admission of all stethoscopists, of the comparative difficulty of detecting aneurisms, particularly thoracic,) that the stethoscope discovers slight effects of disease, but not material or important changes." If this be logic, we are no logicians; if it is science, science with us is at a discount; if it be philosophy, alas! we were deceived; in the vanity of our nature we imagined ourselves philosophers.

What the learned physiologist may consider the minor lesions, or "unimportant changes," I cannot pretend accurately to understand; but if they comprehend such trifling cases as pneumonia in its different stages—pleurisy, acute and chronic—empyema—bronchitis in its various phases—œdema, emphysema, or phthisis, any or all of which we will pledge our stethoscopic character to point out and discriminate to the satisfaction even of his sceptical incredulity; or if it please him to comprehend in this definition the various affections of which the heart is so frequently the seat, and which this mode of exploration alone has enabled us to detect, and thus explain the causes of many deaths that formerly were the perplexity of the best informed practitioner; finally, if Sir Charles has reference to its adoption in obstetric practice, where it has already proved so eminently serviceable in the hands of the credulous Parisian and Dublin practitioners; if these be the cases of unimportant changes for which this mode is only fitted to be employed, I fear we

poor witless stethoscopists will scarcely be able to surmount the charge of fond credulity.

If it will add any strength to Sir Charles's opposition, I shall inform him that, in your journal within the last month, there have been two cases, both, if I mistake not—one certainly—of chronic pleurisy, in the large hospitals, in which the patients were allowed to die, the doctors being in a state of happy ignorance of their complaints, solely, as the reporter justly observes, from omitting percussion and auscultation. At such facts the learned gentleman will shrug his shoulders and look incredulous.

For a teacher in any, particularly a metropolitan, school of medicine, it is surely incumbent to have studied and be conversant with the subjects on which he sends forth his opinions to a class of students. Now Sir Charles is a surgeon, and as such, unless in the matter of fractures (in which, by the way, we would take the liberty of recommending a trial of this outcast instrument), is much less required to cultivate this physical means of diagnosis than he whose study is medicine. Nor was Sir Charles a very young man when Laennec gave to the world the brilliant result of his labours; and if a vulgar adage be true, this would be no slight ground for supposition that Sir Charles would not be particularly zealous in the cultivation of new habits.

From these considerations I would unwillingly incur the charge of presumption, in inquiring if Sir Charles be practically acquainted with what he has thus publicly anathematized. His reference to the candid avowals of others, and the tenor of his address, would lead me, *prima facie*, to conclude that he himself was not possessed of this practical knowledge, but has recommended to others his own self-satisfied condition of happy ignorance; for, doubtless,

> "If ignorance is bliss,
> 'Tis folly to be wise."

Having already adverted to a few of the many *unimportant* diseases in which the stethoscope is more pre-eminently useful—all, of course, included in the general denunciation of Sir Charles Bell—to enter a little more particularly into the merits of the case under consideration may not be altogether uninteresting. "The *whiz* of the blood," says Sir Charles, "through the narrow opening" (*i. e.* the comparatively contracted portion, in the normal condition of the artery, leading to the distended aneurismal tumor), "is a phenomenon so striking, as should instantly declare to the auscultator's ear the nature and position of the disease, or stamp his pretensions as the veriest quackery, equal in all its dimensions," I can conceive the learned physiologist continuing, "to its younger handmaid of homœopathic celebrity." In this observation, it is tacitly assumed that, in aneurism, this whiz has a constant existence; that, consequently, the stethoscope should in all cases detect, elucidate the nature of the obscure affection, or be admitted a mere pleasing toy—a very good thing with which to look wise, and laugh at a credulous public. Any student who has seen half a dozen cases of thoracic aneurism could have informed Sir Charles that this *bruit*, or whiz, was as frequently absent as present; that, in the same case, it will be present to-day, absent to-morrow. Now in this case we have admitted the perfect stethoscopic attainments of the physicians to the Middlesex Hospital, so far as was necessary for the detection of this phenomenon; (but that by withholding this assent, we might not have been doing great violence to the merits of these gentlemen is not improbable, from the fact, that not long since, in a case of pneumonia of some standing, in one of the large hospitals, the physician, who considers himself, and I believe really is, one of the initiated in the arcana of stethoscopic exploration, told the class that the *râle* had disappeared, when such was not the fact,—shewing the liability to be deceived without the utmost caution; but to return:) either this whiz had or had not existence in the present case; if the former, we are necessarily compelled to retract our homage to the merits of the learned doctors, and attribute to their ignorance the failure in discovering the nature of the disease; a circumstance not at all in the scale of probabilities, since we have already said that the veriest tyro—even Sir Charles himself, had he adopted the means—could not have avoided detecting so anormal a phenomenon. If, the more probable case, this sound was not present—and, be it remembered, it is its

erroneously-assumed universal presence in aneurism that Sir Charles has taken as the basis of his attack, if such it can seriously be styled—neither the stethoscope, nor the acoustic organs of the gentlemen examiners, all men in the possession of their senses, will, I doubt not, agree in saying, were in fault for not detecting it.

Thus Sir Charles Bell's unqualified denunciation is contracted into a condemnation for not discovering that which had not existence, or must have been heard; and thence concludes that the sense of hearing, for which auscultation is another name, is a valueless possession. Let any one read his observations referred to, and this logical Scylla and Charybdis cannot fail to present itself.

That the diagnosis of aneurism is still more obscure than that of most other affections of which physical diagnosis professes to treat, is a matter of notoriety. That, when its especial pathognomonic phenomena do present themselves—for instance, this *bruit* or whiz, one amongst many others—it renders equally certain either an aneurism of the vessel, or a condition analogous to it, the persistence or decline of which, without the supervention of other morbid phenomena, will serve to distinguish, is also well known. Thus, pressure even, as of the instrument on the abdominal aorta, or any tumor, as an enlarged or tumified liver, exerting the same pressure, will temporarily produce the same phenomenon, and to the incautious practitioner may be a source of error. In certain conditions of an aneurismal tumor it will be present, when, from some modifying circumstance, which, like too many other medical facts, is yet, I believe, veiled in obscurity, the following day may find it absent, as occurred not long since in a patient of Dr. Bright's, in Guy's Hospital, whom I accidentally saw.

When the portion forming the aneurism is not filled up by coagula to a dimension equal to the calibre of the normal condition of the artery, but presents a space into which the blood is driven through a contracted opening, and thus thrown into sonorous vibrations, there is sufficient reason for the presence of an unnatural sound, which Sir Charles calls the "whiz;" but if this space in the aneurismal sac be filled up by successive layers of coagulum, so that, although the sac may continue enlarging externally, there is an uniform calibre presented to the current of blood, I cannot see any cause for the production of this sound; and if such condition could exist, it is most probable the phenomenon would be wanting.

As the disease in the present case appears to have occurred in the posterior portion of the aorta, it is most probable that, from a want of suspicion of its nature, the examination of the physician was confined to the anterior portions of the chest, in which case all of the auxiliary means of diagnosis, in the absence of the *bruit*—as the modification of the respiratory murmur, the dulness on percussion, great impetus in the portion of the artery, decreasing as the heart is approached, &c.—would be entirely overlooked, and a case set down to the debtor side of the stethoscope, instead of the physician.

Without offering these remarks as more than mere probabilities, to explain some circumstances in this and similar cases, some such circumstances might surely have occurred to Sir Charles, in arrest of his ill-considered judgment.

It is said, that had not Mr. Canning attracted attention by the outpouring of his brilliant eloquence to an attack of some less distinguished member, the country would have known nothing of it; and so it might be in the present case; and really, had this puerile attack been the only one of the kind sent forth, or rather, did we not daily meet, in the medical periodicals and otherwise, scoffs and ridicule towards a branch of science its calumniators do not even pretend to understand—will not take the trouble to learn, yet dare to traduce—this should most probably receive its merit in silent derision; but they have issued from so many quarters possessed of official influence, that it would well become some more able and powerful advocate to expose the presumptuous arrogance with which ignorance would assail the temple of knowledge.

I am, sir,
Your obedient servant,
AUSCULTATOR.

London, Jan. 26, 1835.

THE PROSPECTS OF REFORM IN THE COLLEGE OF PHYSICIANS.

"WHICH SHALL WE DO—REPAIR OR REBUILD?"

To the Editor of the Medical Gazette.

SIR,

THE Fellows, it seems, are fully convinced at last that something must be done. The purport of Sir Robert Peel's address could not be mistaken; the admissions of several of the Fellows before Mr. Warburton, cannot be forgotten. The facts established by several Licentiate witnesses cannot be evaded or denied; and it is obvious that, judging from present appearances, the next assault on ancient privileges and institutions is likely to be not only more fierce but also more effective than the former: for, in the first place, several conservative members of the last Committee (the eminent Baronet, for example) will, it may be feared, have many to them much more important interests to defend; and secondly, Mr. Warburton, and almost every other member of that Committee, was wholly indifferent and impartial, compared with the honourable member for Finsbury, who, I presume, will, as matter of course, be included in the next; and thirdly, the published evidence, the examination already made of the Annals, &c. will enable the chairman (Mr. Warburton, I presume) to open at once on all the weak points of existing arrangements, a fire of queries which, I apprehend, he will find the more conservative reformers ill able to answer.

Under these circumstances it no doubt behoves the Fellows to set their house in order; and it is especially desirable that those of them who hold office, and exercise influence in the College councils, should, with all convenient expedition, propose and urge changes of a large and liberal character. The *official* differs from the *private* Fellow in authority, and therefore likewise in responsibility. The reputation of every society takes its colour very much from the conduct of men in office. I, therefore, as one humble friend of the venerable institution in Pall-Mall East, sincerely wish and hope that the authorities of that accomplished body may translate in the right sense the signs of the times; the bolder taking counsel of prudence, the more timid of fear, and all co-operating in adequate reforms. Such are the earnest wishes of every sincere friend of the College, who is at the same time no hollow admirer and unwilling professor of our noble art. No man, anxious for the honour of British medicine, would unnecessarily subject to a second parliamentary visitation an Institution aged and decayed, indeed, but easily rendered habitable *suâ sponte*, and independently of extra-professional aid. Yet the inevitable result of delay in the prosecution of reforms sufficient to satisfy the majority of eminent Licentiates, will be to expose the influential Fellows at least to a second dose, much worse, probably, than the former, because administered partly, if not principally, by a person who will hardly be suspected of any wish to spare the feelings of the patient. I allude, of course, to the representative of Finsbury. Nor are other reasons besides those of a purely selfish kind wanting. Are the Fellows of one mind, and prepared to stand or fall together in defence of existing defects? Is there no division in the body? If all the seniors are, as is currently reported and generally believed, opposed to large reforms, are all the juniors so also? Mr. Warburton's committee-room was open to the whole town: what sort of evidence fell from Drs. Wilson, Elliotson, Billing, Burrows, and Clendinning; whose statements were made, for the most part, in my own hearing? Did they admit or deny the necessity for numerous and extensive reforms? Dr. Seymour was reported, in the Gazette, to have moved and carried the adjourning, *sine die*, the further consideration of the propositions of the College Reform Committee of last year. Well; did that acute and rather conservative witness deny the justice and necessity of change? Did he not, in some respects, outdo every other College reformer that I know of, except the last of the above-named, in proposing that the Licentiates should have a share in the business of election to the Fellowship? How few of the Fellows, whether senior or junior, denied the hardship of the dissenters' case, or denying it, were found able to assign any decent reason of justice or expediency in defence of their opinion? Did not several deponent Fellows ad-

mit that no sufficient ground existed for the exclusive privileges enjoyed by graduates of the English Universities above those of other schools? Has not the superior moral feeling attributed to Anglican Doctors by several Fellows before the committee, been at least doubted of by others, who seemed to consider the *Permissi* of their acquaintance not less virtuously sensitive than the *Socii*, both classes being, in fact, by all parties admitted as distinguished by correctness of conduct and integrity of principle? Justice, then, and prudence, the House of Commons, the periodical press, the Licentiates, and a portion of the Fellowship, are on the side of concession, and call for ample changes. Reform, therefore, is inevitable; but though sure to come, we may doubt whether it will be spontaneously effected. To mend an institution is often more difficult than to erect one. Personal feelings, associations, and relations, and selfish interests, and corporate biases and usages, are formidable obstacles in the path of the renovator, with which the original builder had nothing to do. College reform must embrace two classes of regulations:—1, such as are permanent, or intended for the future government of the body; 2, such as are merely occasional. Under each head will be found questions calculated to kindle disputes and awaken dormant animosities: for example, with respect to the future. Is the body of physicians to consist of two parts quite distinct, though nominally united?—the one subject to the other;—the one enjoying toleration, the other privilege;—the governing body rendered by self-election and secrecy of proceeding wholly independent of, and irresponsible to the governed? And if the exclusive oligarchical principle is to be impaired, to what extent is such impairment to extend? Will the Censor board-room remain closed, or be opened to the profession? Will the Fourth Estate be allowed to notice the proceedings of the *comitia majora*, or will any change creating responsibility be admitted? Will the elective franchise and eligibility be extended to all Licentiates without any distinction? and if not, on what principle is this distribution to be restricted or regulated? So much for the questions of permanent regulation;—then, as to the purely occasional measures. What are to be the terms of compromise with the present Licentiates? are some few to be selected by the Fellows for incorporation? or are all of a certain standing to be admitted at once? On what footing are those not admitted to stand? as *alieni homines*, as the existing *Permissi*, or in the enjoyment of a greater or less extent of the privileges of the present Fellows—viz. having the use of the library, reading-room, &c. &c.; having the right of voting for candidates for vacancies in the governing body, to which they themselves should be eligible, &c. &c. These and similar questions present themselves the instant the mind is turned towards practical reform. How can gentlemen long accustomed to the easy responsibility of a secret self-elective system be expected to consent that their proceedings should be made public? Some may see the propriety of such publicity, and even wish for the salutary innovation; but what can be expected of the majority? With masses of men, prejudice and habit are as uniform in their operation as gravity: will, then, a majority of the Fellows consent to divide the elective power with other Licentiates? The interests of the public and profession require such an extension; but will the exclusives grant it? And as to terms of compromise with the sufferers by past misrule, will the Fellows insist on selecting, and the Licentiates submit to such picking and choosing? And how are the apprehensions of the Fellows with respect to their future relative influence and responsibility to be allayed by such as would advocate so large an admission of *Permissi* as would probably satisfy the excluded body? such as would, for example, at once double the number of resident Fellows? How are the Fellows to be reconciled to the risk of being *swamped?* So much for those two classes of difficulties.

Then there are interior reforms in the College very much wanted, some of which have been glanced at by several witnesses before Mr. Warburton's committee. The powers, for example, of the anomalous body called Elects are scarcely compatible with good government; they are, it is well known, self-elected, which is of itself too bad; they license for England and Wales at their discretion, I imagine, without any responsibility to the College. Of them, and by them exclusively, is the President elected. Now the President is the head of the medical profession; but he

is more: not to speak of various small pieces of patronage within the College, he is, *ex officio*, a Trustee of the British Museum, a Trustee of the Hunterian Museum, a principal member of the Vaccine Board, and Physician in Ordinary to the King. The office, therefore, of President of the College of Physicians is one of some emolument, and great influence and dignity. Will, then, the physicians of London, or the major part of either section of them, be satisfied with the system that gives the exclusive rights of electing, and being elected, to that high office, to nine senior Fellows?

There are other defects in the organization of the College. The compilation, correction, and publication, of a codex; the inspection of the apothecaries' shops east of Temple Bar; the regulation of the practice of physicians in the metropolis, all devolve on them, and comprehend for the most part duties for which, if practicable at all, the College is very indifferently qualified. Waving debateable points, I ask, is it desirable that the College of Physicians should be empowered to prosecute and punish for unlicensed or unskilful practice? The Censors, like other Fellows, are practitioners; the College vends licenses. The Censors, therefore, are doubly liable to suspicion, whether as witnesses, or jurymen, or judges, in College prosecutions.

Again, let me ask is it *pro bono publico* that gentlemen practising physic only should have the superintendence of the practice of pharmacy, to the exclusion of surgeons, who are for the most part medical practitioners, and of chemists and druggists, whose profession is pharmacy? Again, is it *pro bono publico* that the practice of physic outside the London district should be wholly beyond the pale of collegiate authority? Regulation is salutary or hurtful. If the latter, why permit it in London? If the former, why limit it to the metropolis? Yet these defects it is not in the power of the College to remove; they are legalized.

On the whole, then, when I take into account the importance of the defects which it is beyond the powers of the College to remedy, and the imperfect acquaintance evinced by the Fellows, in their senatorial capacity, with the amount and nature of the grievances of the Licentiates, and the impossibility of their informing themselves sufficiently without frequent and long conferences with the Licentiates, and their indisposition, to all appearance, to such a mode of ascertaining the true relative positions of the parties, and the shortness of the time between this and the meeting of Parliament, and the little likelihood there is of the friendly Tories being long at the helm; considering all these things, I confess I despair of the good cause of spontaneous reform.

I am, sir,
Your obedient servant,
CIVIS MEDICUS.

London, Feb. 10, 1835.

MEDICAL GAZETTE.

Saturday, February 14, 1835.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."
CICERO.

REFORM PROCEEDINGS IN THE COLLEGE OF PHYSICIANS.

THE reform in the College of Physicians *progresses*—as the Americans say; not very rapidly indeed, but certainly at a better pace than the new Pharmacopœia. Monday and Friday last week, and Tuesday and Friday this week, have not seen the *Comitia majora extraordinaria* assembled for nothing at this busy season of the year. The excitement is great and critical; may it also prove salutary! We have no facts to make us despond, but, to say truth, our intelligent correspondent, CIVIS MEDICUS (see his letter) has rather alarmed us. We fear he knows more than he reveals, else we can scarcely understand why he should "despair of the good cause of spontaneous reform." To us it seems that nothing is to be apprehended on this head, when we see the Tories founding their claim to public confidence, and basing their hopes of retaining place, on the extent and variety of the reforms which they propose. So long as the great political parties in the state are bent on the race of reformation, there appears to us little

danger of their failing to urge on all the corporate bodies to the full extent of what the public demand, or the several cases require. With respect to the College of Physicians, we are more disposed to marvel that they have done so much, than to be surprised that they have not done more. Have they not agreed to abolish *in toto* the orders of candidates and inceptor candidates? Have they not consented that a degree from either of the English Universities shall cease to be acknowledged as a passport to the Fellowship? Have they not determined that the alumni of Oxford and Cambridge shall take their place among the Licentiates, with the graduates of Edinburgh and Paris? Have they not thrown open their doors to all men who have received a certain specified education *, even though they may not have a medical degree? Have they not made every Licentiate of 30 years of age, and of four years' standing, eligible to the Fellowship? If they do all this—and we assert that they have agreed to do all this—surely it will be admitted by every candid person that a prodigious step has been made in forwarding the good cause. Indeed, we have no hesitation in saying, that if the above changes be carried into effect in a spirit as liberal as that which seems to have prompted them, there will remain little to desire; but we admit that much depends upon the manner in which the machinery is worked; and till we see how this is managed, we shall refrain from expressing unqualified approbation.

The plan at present is, to have a select committee, to whom certain powers are to be delegated, one-fourth of the number going out every year, but eligible to re-election. Much will depend on the duties imposed upon this committee, and on the manner in which they are performed. It may be very proper that this select body should recommend the persons to be chosen as Censors, and to hold other offices; but we do not approve of delegating to them exclusively the privilege of recommending Licentiates to be elevated to the Fellowship: the Licentiates ought themselves to have some voice in a matter in which they are so deeply interested. Why not allow them to send up two names for each Fellowship, the committee deciding between them? If the number admitted be not very large, there must be picking and choosing and favoritism. If the Licentiates themselves had a share in this, they could not reasonably complain; but if they have no share, they most certainly will complain. This—we mean the selection of those to be made Fellows—is the point of all others most likely to form a stumbling-block.

Again, the order of Licentiates ought at once to be recognised as *members* of the College, and have the right of admission to the library and museum. Indeed, their exclusion from these is quite preposterous and indefensible.

We wish the College had done away with the "Elects," which our correspondent very justly calls an "anomalous body;" but if they are to be retained, it appears to us that a regular succession of elective privilege might be established—thus: the Elects to choose the President (as now), the Fellows to choose the Elects, the Licentiates to choose the Fellows; that is, to send up two names for every one to be elected, as the Common Council send up two candidates for the Mayoralty, the selection resting with the Court of Aldermen.

We have given the latest information to be had on this subject, but shall probably have to recur to it again very soon, as it is evidently intended that something shall be done this time, and that too before the parliament meets.

* The precise curriculum has not yet been made out; but we understand that it will differ in some respects from that proposed in 1830.—Ed. Gaz.

CORONERS' INQUESTS.

CASE OF APPARENT DEATH.

Considering the number of inquests that are daily occurring, it is singular that they attract so little of the serious attention of practitioners. Perhaps the calculation which has been made is not very far from the truth—namely, that the number of judicial investigations taking place before coroners in the course of each year, throughout the country, does not fall far short of five thousand; and far the greater part of these require the assistance of medical witnesses. Even on Monday last, a single morning paper (the *Times*) contained an account of no less than *thirteen* inquests: two of them relating to cases of death from fracture of the skull; one a fall from a scaffold; two sudden deaths, from apoplexy supervening on drunkenness; one a case of hanging, in a supposed state of insanity; one death from burning—a red-hot iron having fallen out of a forge-fire on a person asleep and drunk; a case involving the question of child-murder; two cases of poisoning—one by prussic acid, the other by opium; and, finally, three cases of death by starvation and exposure to cold! Medical evidence was given in most of these cases.

But it is not our intention, at present, to dwell on the necessity of having proper professional evidence on such and the like occasions; nor need we repeat the remarks which we have heretofore frequently offered, on the wretched provision, or rather the absence of any regular provision, on the part of our government, for meeting the urgency of the want of medical assistance at inquests. We allude to the subject chiefly with a wish to point out the loose and incautious conduct which we have reason to think is but too often displayed by practitioners who have to deal with business of this nature. In the example which we subjoin, the fault would seem principally to lie in the want of decision evinced by the medical man who had the treatment of the case. The question which required that decision, we admit, was one of more than ordinary difficulty; but what we are dissatisfied with, is the hastiness with which it was treated in the first instance, and then the facility, the almost infatuated acquiescence in an absurd proposal, with which it was afterwards met.

The case was one of apparent death. A young woman, aged 19, who had been confined three months previously, but was in good health and spirits up to the evening before her dissolution, was seized with illness, and soon fell into what those about her called "the agonies of death." A medical practitioner was sent for; he arrived in about twenty minutes (this was between 9 and 10 P.M.), and presently pronounced the patient dead, adding, that it was of no use to attempt any methods of restoring animation. However, on the following morning (twelve or fifteen hours after), the body being found still warm, he was called in once more, when he endeavoured to take blood from the arm, and ordered the deceased to be put into a warm bath. No benefit, of course, was derived from this proceeding.

It appeared by the statement of a woman who remained by the bed-side all night, that no motion had been observed in the body after "the agonies;" and it was suggested that the heat had been retained in the corpse by the several blankets which covered it. The cause of death could not be assigned. No morbid appearances were found in any of the cavities of the body. An inquest was held on the next day, when the jury, after a patient investigation of the circumstances, could not refrain from expressing their astonish-

ment at the proceedings of the medical attendant. After examining that gentleman, and hearing his defence —which amounted only to this, that he acted as he did on his second visit, merely *for the satisfaction of the friends*—the jury, we are told, had "a long discussion as to the propriety of censuring the conduct of the surgeon, but eventually the verdict was returned of 'Died by the visitation of God'*."

We give the facts just as we find them: we know nothing more of the case than what we read in the newspapers; and upon such grounds we own we are strongly inclined to think the surgeon was wrong in two ways;—1, in not adopting some active measure, when first called in, to resuscitate the patient: it was *then* that he should have attempted to *satisfy the friends;* and, 2, in acting as he did some fifteen hours afterwards—opening a vein and ordering a bath, at a time when, by his own admission, it was so perfectly hopeless. What a monstrous error of judgment, to dream of giving satisfaction to the friends by such a line of proceeding! surely any body with his ordinary wits about him would have perceived that it must have just the reverse effect, while it compromised most perilously his own reputation.

We abstain from further comment. We repeat, that in alluding to this and other similar cases, we are actuated by no other motive than that of warning medical men of the necessity of being particularly cautious in transactions like these, which bring them so prominently before the public.

HOMŒOPATHY.

A SET of obscure persons in Paris, professing to be the disciples of Hahnemann, lately petitioned the Minister of Public Instruction for leave to set up a Dispensary in the French metropolis. The Minister referred the matter to the Academy of Medicine, who have, in consequence, been obliged to appoint a commission to inquire into the nature of homœopathy, and upon what ground the petitioners seek the attainment of their object. Some members of the Academy were for scouting the matter at once, but they were overruled; it being one of the blessings of a scientific institution thus under the immediate control of government, to be ever ready at the beck of the Minister to undertake the investigation of any monstrosity whatever submitted to them, whether Phrenology, Animal Magnetism, or the figments of Hahnemann.

* *Times*, Feb. 4, 1835.

DEATH OF M. DUPUYTREN.

THIS most illustrious surgeon expired on the morning of Sunday last. He had never perfectly recovered from the malady for which he had to visit Italy some months ago; and latterly he suffered from a disorder of the chest, which was rather overlooked till gone too far. He possessed the full use of his intellectual faculties up to nearly the last moment.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Diagnostic Symptom in Peritonitis.

A PAPER was read at the last meeting, by Dr. Bright, of Guy's Hospital, the chief object of which was to point out a symptom occasionally occurring in inflammatory attacks of the peritoneum, and of importance as diagnostic of particular changes in that membrane. He stated, that when adhesion had taken place between the peritoneum lining the parietes of the abdomen, and the peritoneum covering any portion of the included viscera, a peculiar sensation might be perceived by the physician who placed his hand over the part; which varied from "the crepitus yielded by emphysema, to the sensation produced by bending new leather in the hand." Four cases were detailed in which this symptom had existed, and by it the existence of such adhesions had been detected during life; and the post-mortem examinations had proved the correctness of the diagnosis. Three of them were cases of ascites, two of which had survived the operation of paracentesis several years. One was a case of ovarian dropsy, in which the patient had

refused the relief which had been proposed by paracentesis.

Dr. Bright had seen other cases in which the same symptom had been observed, but the health of the patients having been re-established, the adhesion could only be matter of conjecture.

The paper afterwards proceeded to the description of several morbid changes occasionally observed in the peritoneum, which were illustrated by some cases and observations.

CLINICAL LECTURE

ON

SCROFULOUS DISEASES OF THE HIP,

Delivered at the Middlesex Hospital, November 29, 1834,

BY SIR CHARLES BELL.

I AM desirous of drawing your attention to-day to diseases of the hip, meaning the common scrofulous diseases of that joint.

When you see a child that is confined to bed with a great swelling of the hip, you often find that it has a pretty face; that is to say, a fair complexion, light hair, and blue eyes; and generally there is a peculiar character of mind as well as of body—a precocity of intellect; affording something like a reason for that greater affection on the part of the parents—a happy provision, at any rate, for a creature so miserable and helpless. The child passes many months, nay years, in this sad condition, and too often at last sinks under hectic, and suppuration around the hip; or if it survive, it rises only to move about on crutches, and is lame for life.

This disease makes its attack at all periods, from the earliest infancy to mature age. The cases about to be laid before you occurred from $4\frac{1}{2}$ to 30 years of age; and I have known it take place in a child at the breast; indeed, I have had reason to believe that the hip disease is occasionally consequent on violence done in delivery. You can imagine nothing more likely to sprain, and to give rise to disease of the hip, than the violence done to the infant in turning.

When an opportunity offers of examining the state of the parts, there is absorption of the cartilages, wasting of the firm ligaments, which are reduced to membranous shreds, and abscesses surround the joint. In a few words, this is the disease which I now desire you to study, and with the advantage of seeing every variety.

In approaching such a subject, you must consider the structure of a joint, and especially the physiological character of the parts constituting it. You remember how the articular head of the bone is tipped with cartilage, and how the synovial membrane that forms the lining of the cavity, the stronger capsule, the accessory ligaments that are around it, the tendons that pass over the joint, the thecæ containing these tendons, the bursæ, and even the fasciæ, have all a peculiar character; that they are termed low in regard to vascular action, and are low in the scale of sensibility. But the application of the word *low* here is not right, because, instead of being an imperfection, it is a most admirable provision. That which we call insensibility is only the nice adjustment of the sensibility of the part to its functions; for were those parts which I have now enumerated more sensible, you would walk home with lameness, and suffer as though you had rheumatic inflammation of the joints. The apparent diminution of sensibility, therefore, is only the adaptation of it; there is sufficient sensibility to make it an appropriate guard against excessive motions of the joint, and yet to permit the natural use of the limb. In like manner, the vascularity of the joint is of a particular kind; but it is not therefore imperfect. But when we admit this fine adaptation, we can understand that with it a peculiar constitutional predisposition prevails.

All parts, then, so characterised, are the especial seats of scrofulous inflammation. There being a constitution prone to struma, those are the parts on which the constitutional predisposition falls; and it must be part of your study, in these local diseases, to ascertain what character of general disorder prevails. It may be that general disorder which you call bad health, and which to dwell upon would require hours of prelection; it may be, that there is strumous constitutional action concentrated and directed to the particular part; or it may be rheumatic inflammation, or gout, or syphilis. Surely it requires no argument to urge you to the belief, that to be a good and safe surgeon you require to be a physician. To-day, for example, there is a case sent into our wards from the physicians'; there is a large painful knee, stiff, and somewhat contracted. In what it differs from other cases we are warned by the place from which the young woman comes. Accordingly, she says she has been *cured* of pain in her shoulder, in her hip, in her elbow, by which at least we know in what condition is this more obstinate knee. In more sim-

ple cases, such as would be at once thrown over to the surgeon, you have all the varieties of disease to consider which may fall upon the great joints; in short, much of the practice of medicine must pass through your mind before you can be a safe surgeon, even in regard to disease of the hip-joint. How closely, then, is the study of the two departments connected.

The first case to be read will shew that an affection of the hip-joint is not a local disease, in the proper sense of the word; that it does not always arise from injury to that particular joint, but that you will find it intimately connected with the constitution.

"Elizabeth Cook, æt. 20, a little woman, with angular curvature of the spine, no doubt originating from caries of the bodies of the vertebræ, which has existed since she was three years old, was admitted for disease of the hip-joint. It is said to have been caused by a fall down stairs. Two years ago she was attacked with pain in the hip, and after it had existed for eleven months an abscess formed below the groin, and another behind the trochanter major: these burst, and have since continued to discharge matter, closing for a short time, and then again, with an accession of fever, bursting out. Two or three months ago she began to suffer pain in the left elbow, and soon afterwards abscesses formed around the joint; not, however, communicating with it. She complains a little of pain in the hip, but the disease of the elbow is the seat of her present misery, so as to prevent her sleeping, in spite of large doses of an opiate. She has been treated with quinine and steel. The elbow has been wrapped up very warmly in cotton wool; a bent splint has been constantly kept upon it, to prevent motion; and blisters have been occasionally applied. By this treatment the disease of the elbow has been much alleviated; but she is gradually becoming worse in constitution. There is now more discharge from the sinuses in the thigh; the appetite fails; she is subject to colliquative diarrhœa, which chalk, opium, and catechu, check only for a short time; she has a regular return of hectic fever every night."

This case is illustrative of what I have been stating—indeed, of what you have seen. Here is disease of the spine, disease of the hip, and disease of the elbow. Wherever there is a slight injury, sprain, or sore, there the morbid action exhibits itself. Now, do you know, I believe this poor creature will weather it still. The period of constitutional disease will pass, but she will remain a maimed and contracted object.

I think I have observed, though we should be slow of drawing such general conclusions, that these local diseases prevent worse; and that, of a consumptive family, she who has had diseased joints, or scrofulous glands, has escaped the more formidable attack on the lungs.

Directing our attention more particularly to the hip-joint, we become at once aware of the necessity of attending to the anatomy, because you must have seen that there are various diseases and accidents which you may mistake for scrofulous hip disease. There are various nervous affections which it is a serious evil to mistake; there are disorders in the abdomen and pelvis which produce pain in the loins and hips; a collection in the colon will produce pain in the hip, down the thigh, and in the groin; affection of the kidney, which will cause pain in the thigh and hip; and mere rheumatic affection of the muscles of the hip may be mistaken for a more serious disease of the joint; and the formidable affection of the ischiatic nerve may likewise be misunderstood. Now I hold, that in order properly to distinguish such cases from that which is our present subject, we must think of the anatomy. The grand features in the outline are these: you remember the acetabulum—that there is one cavity within another; and you remember what occupies the internal cavity—that there is a soft, fatty, vascular structure, and that this is especially the structure that will be influenced by the kind of deranged health we have spoken of. You will remember how possible it is to propel the head of the bone directly and perpendicularly into the joint, so as to hurt the soft part, and to give rise to just so much local injury as will direct the constitutional disposition; you will readily conceive also that on the fatty apparatus in the lesser cavity swelling, it becomes subject to the pressure and friction of the head of the femur, and that this is often the commencement of diseased hip, rather than the twist, or bruise, which first calls the attention of the patient. You especially remember the strength of the capsular ligament at the anterior part, where it is covered by the accessory ligament, which supports us whenever the line of gravity of the trunk is behind the centre of the joint; and you remember that there is a part of the capsule towards the inside which is very thin, and that this will be the part where there will be a communication between the external abscess and the internal suppuration of the joint, when the disease is far advanced. Then you will recollect the manner in which the psoas magnus and iliacus internus come down over part of the pelvis; how the latter runs over part of the joint, and how closely connected the ten-

dons of these muscles are with the accessory and capsular ligaments. Hence you are prepared to understand that in order to relieve the pain in all inflammations of the joint, there must be a relaxation of this muscle; and such relaxation implies a certain position of the person—whether standing upright or lying in bed. This is the reason that, in going round, I entreat the patient not to move; and, on laying down the bed-clothes, you may see by the posture of ease which he assumes what is the disease. You will remember the manner in which the glutei come down from the back of the pelvis and cover the hip, and what would be their action—that it would be to propel the head of the bone deep into the inflamed cavity, if that action were permitted. Therefore you will be sure to observe that position of the pelvis and thigh which tends to counteract this pressure, and throw the head of the femur out from the inflamed cavity. You will reflect also, that the state of total inactivity of those muscles causes them to waste; and hence the flatness of the diseased hip, in contrast with the roundness of the other. These considerations will be sufficient, being anatomists and surgeons, to enable you to distinguish the more serious and deep disease of the hip-joint from a casual affection of the surrounding parts or nerves—such as rheumatism or neuralgia; and also to distinguish the hip disease from psoas abscess. Again: you will find us, as we go round, having a certain difficulty in ascertaining whether there be disease in the hip, or whether there be suppuration coming down the tract of the psoas muscle to the groin.

Thus it is that we require data to reason upon and to direct our observations, so that we may comprehend the cause of the particular position of the patient—the indication from that position.

The next case is that of

"Mary Davies, æt. 8. Some weeks ago she fell down and bruised her hip. She is a scrofulous-looking child, and the mother is very poor. The hip became inflamed; she was treated as an out-patient for a fortnight, but was getting worse instead of better, from the want of good diet and warm clothing. She was admitted into the house on the 18th November. She assumed the usual posture of a patient with inflamed hip, when in bed—viz. the knee bent, the thigh drawn up, the diseased hip raised, and the body twisted. At first leeches were applied; then a succession of anodyne fomentations, then a warm stimulating plaister over all the hip. She had proper nourishing milk diet, with tonics. Now she is better, and lies straight in bed."

From this case you see the character of the disease. You will find, in private practice, that the mother calls you to examine her child's hip. She will tell you that her boy can run about, but when he comes in from play, and gets cool, he becomes stiff and full of pain, and cries on motion; but on the morrow he is again active and running about, and when he is heated and excited he can walk and run very well, but still in the evening he comes home to his parents complaining of pain and stiffness; and this is the first thing that attracts their attention. By and by the pain and inflammation arise to that extent that the child must be confined, and now there is sympathy of the general system, and fever. This is the chronic disease; but do not let us forget, that instead of such a disease as we have seen in visiting the wards to-day, there are instances of acute inflammation of the hip running its course, and destroying the delicate subject of it, in three weeks. We sometimes see a delicate boy, or girl, with acute pain and high fever, and the twisting of the pelvis and the position of the limb very remarkable; the limb and body lying at right angles, and death ensuing from the acute and rapid attack. I have actually found, on dissection, the femur dislocated.

How are you to examine the child brought to you with the chronic disease of hip? You place him before you, and you find that upon throwing off the clothes, in the early stage, there is a fulness of the hip, and an apparent projection of the trochanter. You have just seen this appearance, and therefore I hope it will make a due and permanent impression upon you. But afterwards, at a second period, instead of fulness, which implies an active state of inflammation, there is a remarkable breadth and flatness. The meaning of this I have in part explained to be, that the muscles and fat, but especially the glutei muscles, begin to waste: when inflammation of the hip has continued for a long time there can be no action of the glutei, and the fulness which these three muscles produce on the hip is gone—they become wasted, and a certain flatness of the hip is the consequence; and thus we explain the flatness of the hip. With regard to the hip, and also to the corresponding joint of the upper extremity (the shoulder and deltoid), how often do we find surgeons, imperfectly educated, asking, "Is this dislocation or not?"—when there is nothing but flatness from wasting of the deltoid, by which the fulness of the shoulder is lost. Now what deceives him is the flatness of the shoulder from the wasting of the deltoid muscle; and then the jerking of the wasted head of the humerus in the socket, the projection

of the acromion, and the uncommon distinctness of the bones, from the wasting of the deltoid muscle, appears very like dislocation. See, then, how the circumstances that attend the disease which you have to examine, and upon which you have to reason, must always be considered with a reference to the anatomy.

Another point upon which you must be very careful, is that of distinguishing hip disease from the general wasting of the limb; for remember that there is a condition of the extremity which it is very difficult to comprehend, but which is also a very common occurrence. The limb ceases to grow, it is struck with an imperfection of a peculiar kind that impedes its growth, the development of the parts is retarded, and there is, with the smallness of the hip, an imperfection in the whole limb. Hence it comes, that being drawn to observe the limp in the gait, and then the peculiarity of the hip, you may do as I have known some before you—put issues in the hip. But what a lamentable thing to put an issue in the hip, and perhaps confine the boy to bed, when, after all, it is only an imperfection in the growth of the limb, where proper exercise and general health can alone give any hope of amendment!

I have said that you must be careful to distinguish hip disease from lumbar abscess. When there is disease in the course of the lumbar muscles, the patient, in standing, bends forward, so as to make the origin and insertion of the muscles approach. He cannot stand upright; the knee is bent; and so much does it look like disease of the hip, that you will have to go into a course of inquiry before you can say whether it be that or commencing psoas abscess.

I particularly beg your attention to what you have seen, for it is much better to see than to hear; and what I have now to deliver, such attention would render almost superfluous. You have seen how the child lies in bed—that the body is bent towards the thigh, or the thigh raised, which is the same thing; the object of this, as I have stated, is to prevent the pressure that would otherwise be made by the psoas and iliacus internus muscles upon the inflamed capsule: the diseased limb is thrown over the other in a very particular manner. My explanation of this is, that the other thigh being, as it were, a fulcrum, the diseased limb is thrown over, so that the weight of the lower part of the limb shall more than counterbalance the upper part, and therefore raise the head of the femur outwards from the acetabulum—not actually raising it, but still relieving it from pressing upon the inflamed acetabulum, and therefore relieving the pain.

But there is another very singular occurrence, which seems to be a contradiction, viz., that the limb is sometimes elongated and sometimes shortened; you must therefore always mark whether it be actually an elongation or shortening of the limb, or whether the alteration is in correspondence with the pitching of the pelvis,—which pitching varies in different cases. If the child be going about with disease in the right hip, and cannot stand upon it, or throw the weight of the body directly over it, but rests rather upon the other limb, and shoves the diseased limb forward, that side of the pelvis sinks; the spine then assumes a curve or inclination corresponding with the pitching of the pelvis; and when you lay the child down, the diseased leg appears the longest. But if the complaint be more violent, not so slow or chronic in its progress, and the child lie as the half dozen patients whom you have seen lie with disease of the hip—that is to say, with the hip raised and the limb thrown over—then the limb will appear shortened. Thus the best way is to look to the position of the heels or of the patella, and mark the obliquity of their position with reference to one another; and then see whether that of the superior anterior spinous processes of the ilia is in a corresponding line of obliquity.

But I will not lead you to the consideration of the cases of unmitigated suffering and death, without the consolation of believing that many of these cases, especially of children, with care, rest, warmth, and good food, recover. If this should be with actual anchylosis, a serious question of operation occurs, which we will wave at present. But often it happens that the patients recover and retain the use of the limb, only it is short, and the cartilage and the head of the femur misshapen.

I will give the following case, to mark the disease in its almost ultimate stage, in a person further advanced in life: she lies in Northumberland ward.

"Sarah Ann Hoffmeister, æt. 30, was admitted on the 2d November, with sinuses around the right hip. She had diseased hip when she was seven years old, and was for three years unable to walk without crutches. At the age of 11 she left off using crutches, the leg being strong and useful, though she walked with a halt. Two years ago she says she had fever and cold, and a swelling formed under the hip, and burst, and continued to discharge for 18 months. She was then beginning to get a little better, when one day, after a long drive, she felt something troublesome in the rectum, and a friend extracted a piece of bone through the anus. It is cancellous, about the size of a nut, but pre-

sents only a small portion of the external surface. About the time when this piece of bone came away, she perceived air in the abscess, which she imagined came from the bowels, and passed out at the sinus. There are three sinuses, which all appear to tend towards the trochanter major; the largest opens on the outside of the thigh, three inches below the trochanter. There is not much discharge from the sinuses, but she is subject to diarrhœa; and the matter discharged from the bowels is like chalk and water, mixed with fæcal matter, and appears to contain a very large proportion of pus. Poultice to the wound occasions pain, so that it is dressed with simple dressing; the tongue was spotted, and the stomach out of order. She took hydrar. c. creta and aromatics for a day or two, and cinchona, gentian, and spirit ammon. aromaticus, &c. She was better for a few days, but the purging soon returned, which was stopped for a time with chalk, catechu, and aromatics. It is necessary to court her appetite.

"Nov. 20th.—She has continued to be purged five or six times in the twenty-four hours, and sometimes oftener, great part of the motions consisting of pus; and chalk and astringents only check it for a short time. She has found the flatus from the bowels passing more frequently through the sinuses of late; and for the last two days something like feculent matter has been observed upon the dressing, and the hip has become more painful.

"27th.—Since the last report she has been daily becoming weaker; she suffers more pain; she is worn out with diarrhœa and discharge, both external and internal, from the hip; and at each motion of the bowels a considerable quantity of feculent matter escapes by the sinus. She can take nothing now but a little wine and arrow-root, the stomach rejecting every thing else."

The reading of this case directs your attention to the pathology; and some of you may have seen the suite of preparations which were in my museum illustrative of this very stage. When the head of the femur itself had wasted, the sharp point bore through the acetabulum into the pelvis!

The first remark I make on the case is, that when the patient recovers from this horrid disease, there are always marks of the part being arrested in its motion; ligamentous connexion binds the trochanter to the pubis, or an exostosis extends from the top of the femur, and meets a corresponding process of the margin of the acetabulum; so that the motion of the joint is checked, or rather stopped, by anchylosis. Looking at this poor creature, one cannot but suppose that the great excitement to the continuance of the disease is the motion of the diseased bones. You are aware, and it is particularly necessary that you should notice, in reference to this very complaint, that there is no motion of the body but what is attended with a corresponding change of position in the hip-joint. You cannot stretch out your arm but there is some new poising of the body, and which change is permitted by the trunk, in fact, the acetabulum, moving upon the head of the femur. Persons cannot change their position in bed without there being a change of position and relation between the head of the femur and the acetabulum; and hence it is, whether the patient be up or down, moving about, or lying in bed, there is incessant motion, and consequent upon it an uninterrupted irritation and excitement to inflammation in the hip-joint.

In other cases, we do not merely find that an exostosis has stopped the motion, or that a ligamentous connexion has been found tying the parts together, but we find an actual anchylosis, or joining of the head of the bone with the irregular surface of the acetabulum.

These are the circumstances observed on dissection, after a patient has recovered from an advanced state of the disease; but when they die under it, we find a very different condition of parts: the muscles over the hip are quite degenerated; not only have they decreased, as it were, by the process of wasting and inflammation, but having been totally without use, they have gone almost into shreds of cellular membrane, or a gelatinous matter occupies their substance. Then there are suppurations, or the remains of large abscesses, external to the capsule; and sometimes—nay, frequently—these abscesses communicate with, and have probably arisen from, suppuration within the joint. The head of the thigh-bone is wasted by ulceration, the cavity of the acetabulum is shallow from absorption having taken place there, and sometimes it has almost disappeared. And I have just said that I have had preparations shewing the remaining head or cervix of the femur, projecting quite through the acetabulum, and resting on the rectum and bladder. Now that at once shews you what may have taken place in this unfortunate creature, since you see that she has been long subject to the disease, giving full time for this morbid condition to occur, and since you find that bone came by the rectum. But it has not the appearance of having passed by the stomach, or through a digestive process, nor of having stuck in the rectum after passing the canal; on the contrary, it is a portion of the pubes or ischium.

But another circumstance certainly leaves no doubt of the extraordinary progress made in the disease: the flatus comes through the sinus; there is a communication, therefore, not only with the pelvis, but with the rectum, and flatus comes through this passage. There is an abscess, it may be, through the joint itself, and the faculent matter is discharged at the top of the thigh. These are the lamentable circumstances that attend the last stage of the disease.

Treatment.—Now what is to be done in these cases? Let us first contemplate the commencement of the disease in such young patients as we have seen. The indication here is to prescribe careful and good diet, not thoughtlessly ordering for an infant food appropriate only to an elderly person, but diet fit for a child; warmth, proper clothing, great attention to the discharges from the bowels, such occasional laxatives as will prevent accumulation, the warm salt bath, or warm hip bath, fomentations to the hip, warm plaisters over the hip, and perfect quiet. The child, which is described as now rolling freely in bed, was lame, and felt pain on every motion, when it came in; it has been treated in this way, and already you perceive the amendment. An issue may be placed on the hip, and warm poultices and fomentations over it.

In addition to the care of the diet, and of the state of the bowels, you add a tonic suited for a child; for example, soda, rhubarb and steel, the vinum ferri, the alkalies, as liquor potassæ and lime water, in good beef-tea, &c. You must watch and satisfy yourselves of the effects of iodine in those children who are taking it. Where there has been scrofulous cutaneous ulceration it appears to have a happy effect. It is to be regretted when you have to lower the action in these cases; but you must cup and apply leeches in the acute and violent inflammation of the hip joint. In all cases you watch the formation of abscesses, and open them early by puncture, or the matter will burrow extensively.

But what is to be said when your patient approaches to the state in which you find the parts in this elderly person? Such is the condition of the joint, that you cannot secure it against motion. You see that in one patient I have attempted to stiffen the elbow-joint. I did not then know what the bed-clothes covered; I did not know that the patient was so far gone with disease of the spine and hip; my attention was drawn to disease of the elbow; and I endeavoured to keep it perfectly fixed, knowing that thereby the activity of the inflammation and the pain would subside. And, by the by, as I hope I am of some use to my dressers, let me beg them to recollect that the connexion is that of reciprocal advantage: they should be to me eyes and ears, reminding me of all that is neglected. However, that poor creature, by our attention to the elbow, has certainly reaped advantage; and were the disease of this joint her only complaint, I think I would eventually have shewn you that there is a better and a milder cure than cutting out the joint;—an operation which should not be thought of unless there be caries of the extremities of the bones entirely into the joint. But we cannot fix the hip-joint; I have attempted to fix the thigh, but I did not find it practicable: the continual motion of the whole body upon the head of the thigh bone counteracts our little contrivances.

I am almost loath to present anything that has the character of being speculative, but you have sometimes seen a curious object in the streets, with his leg sticking out before him, and moving alertly on crutches; anchylosis, effecting a cure of the disease, having taken place in the hip. The question, then, is, whether the neck of the thigh-bone might not be here divided, and ligamentous union produced, so that the limb might at least hang from the body, and not always project in front of the person. The operation has been done, but it was not from its success that another suggested itself to me, but which I have never executed, viz., the division of the neck of the thigh-bone, so as to permit the head of the bone to lie quiet in the acetabulum. I am convinced that motion is the great source of irritation; and I do verily believe, that if we could divide the neck of the thigh-bone, and cause the limb to move upon the cervix instead of the head of the bone, the disease would subside. With respect to this patient, I fear we shall never have an opportunity of performing such an operation; indeed, she lies in a state of such suffering, that it would be cruel to examine her or even to move her. Yet I will be bold to say that the neck of the femur in this woman is as soft as a piece of bread the second day after baking; so completely has it been bereft of its natural play, and consequently of its solidity.

Although these are my last words upon this head, let them not be thought of the most consequence to you, but attend to the common cases—such as were described to you in the beginning of the lecture. Look at the marks and the symptoms of the disease—at the manner of ascertaining its particular nature, and treating it: for as these cases must come repeatedly before you in the course of practice, so I repeat my old saying—that therefore they are in-

finitely the most important points for you to consider.

The patient above alluded to, died exhausted. Both the femora were found anchylosed in the acetabula. The history gave no reason to believe that she had ever had inflammation of the left hip. Sir Charles Bell mentioned that he had seen both the hips and knees anchylosed merely by confinement, where no disease was suspected in those joints. Sinuses containing fæcal matter surrounded the right hip-joint: the prineipal one ran between the troehanter minor and os pubis, and under Poupart's ligament, and so communieated with an extensive ehain of abscesses, filled with scrofulous matter, in the psoas and iliacus internus muscles. These abscesses winding round, at length communieated with the reetum by a large funnel-shaped opening, opposite the middle of the sacrum. This led to the remark that the ease originally had been psoas abseess, and gave another proof of the difficulty of distinguishing the disease of the hip, properly so called, from scrofulous inflammations which affeet the joint in a secondary way.

AUSTRIAN STATISTICS.

In the year 1833, the number of deaths in the Austrian monarchy was 665,731, being 76,917 fewer than in the preceding year; the deaths from eholera, however, in the latter year may aceount for the difference. The number of births was 815,293. Among the deaths were—by suicide, 724; hydrophobia, 35; casualties, 5003; murdered, 422 (in the preceding year, 466); exeeuted, 36 (in the preceding year, 53). There were 450 persons who were above 100 years of age. The population of Austria, inelud-ing Lombardy, Veniee, Dalmatia, the Tyrol, &e. is at present reckoned at about 34 millions.—*Frankfort Paper.*

NEW MEDICAL WORKS.

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A Treatise on Insanity and other Disorders affecting the Mind. By J. C. Prichard, M.D. 8vo. 14s. cloth.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES FEBRUARY 12, 1835.

John Gay, Wellington, Somersetshire.
James Edman Beveridge, London.
Henry Pilleau.
James Thomas Blackmore, London.
John Lewis Barrallier, Leigh, Lancashire.
Aris Henry Nourse, Birmingham.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *Feb.* 10, 1835.

Abscess	1	Hooping-Cough	16
Age and Debility	49	Inflammation	25
Apoplexy	3	Bowels & Stomach	5
Asthma	27	Brain	1
Cancer	3	Lungs and Pleura	11
Childbirth	6	Insanity	4
Consumption	70	Jaundice	1
Constipation of the Bowels	1	Liver, diseased	9
Convulsions	41	Measles	8
Croup	3	Mortification	3
Dentition or Teething	10	Paralysis	4
Diarrhœa	1	Small-Pox	15
Dropsy	14	Sore Throat and Quinsey	2
Dropsy on the Brain	16	Spasms	2
Dropsy on the Chest	1	Stone and Gravel	2
Fever	4	Thrush	3
Fever, Scarlet	11	Tumor	2
Fever, Typhus	3	Unknown Causes	27
Gout	2		
Hæmorrhage	2	Stillborn	16
Heart, diseased	3		

Increase of Burials, as compared with the preceding week . . . 24

METEOROLOGICAL JOURNAL.

Feb. 1835.	THERMOMETER.		BAROMETER.	
Thursday . 5	from 38	to 49	30·13	to 29·95
Friday. . . 6	32	44	30·03	30·18
Saturday . 7	30	46	29·94	29·60
Sunday . . 8	31	44	29·61	29·57
Monday . . 9	32	39	29·60	29·72
Tuesday . 10	29	40	30·02	30·14
Wednesday 11	24	41	30·24	30·30

Wind variable, N.W. prevailing.

The 5th and 6th generally clear; a little rain and sleet during the night of the 5th and 6th; the 7th cloudy; the 8th, 9th, and 10th, generally clear; rain on the night of the 8th; the 11th cloudy.

Rain fallen, ·125 of an inch.

CHARLES HENRY ADAMS.

NOTICE.—We have to apologize to several correspondents whose papers we cannot find room for this week.

ERRATUM.—In the List published in our last No. of gentlemen who had received diplomas at the College of Surgeons, the name of William Foxton Haley, Moulton, Spalding, was erroneously inserted for John Henry Clark, of that place.

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THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, FEBRUARY 21, 1835.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture XXI.

DISEASES OF THE HEART.

THEORY OF THE SIGNS OF DISEASES OF THE HEART.

The diseases of the heart, like those of the lungs, were involved in great obscurity from the earliest period of medical history to the present century. It is true, more had been effected towards the description of the morbid changes of the heart than of those of the pulmonary organ, by the successive labours of Lancisi, Morgagni, and, above all, of Senac; but whilst these authors pretty tolerably described the organic changes which took place in this important viscus, they overlooked almost entirely the physical causes which commonly produce them. Since the time of these illustrious anatomists, the morbid anatomy of the heart has been so accurately described, that perhaps there is nothing left undone. We owe this perfection to the works of Corvisart, Burns, Bertin and Kreysig, and Laennec.

But although the lesions of the tissues composing the cardiac organ were earlier understood than those of the lungs, yet their signs were, if possible, still more obscure than those of the latter viscus. It may be said that there were then no local signs, and that the functional and general symptoms also were extremely uncertain: thus palpitations, or irregularities of the pulse may occur, either with or without a change of the structure of the heart, and dyspnœa being a common sign of the affections of both the thoracic viscera, is insufficient alone to demonstrate which of them is diseased. The great discovery of Laennec has, however, so completely unveiled all obscurity relative to the signs of cardiac diseases, that we are now enabled to distinguish even which particular cavity or valve of the organ is affected.

In prosecuting this subject, we shall first treat of the theory of the local signs of the diseases of the heart; and, secondly, of the diseases of that organ, of the pericardium, and of the large blood-vessels.

Before we consider the theory of the signs, it will be necessary to describe the situation of the different parts of the heart in relation to the parietes of the chest.

Laennec divided the precordial region into two parts; the right corresponding to the inferior third of the sternum, and to the right side of the heart; and the left comprising the space between the cartilages of the fourth and the seventh sternal ribs, having beneath it the left side of the organ.

I have followed the example given by Dr. Hope, of passing needles into the chest, for the purpose of ascertaining the relative positions of the thoracic parietes to the different cavities and valves of the heart, and to the large blood-vessels. Placing a subject upon its back, I dissected the skin from the anterior part of the chest, and drilled a hole through the centre of each bone of the sternum and passed long knitting needles through them as perpendicularly as possible to the vertebral column, and fixed them there. The intercostal and pectoral muscles were then removed, so that the anterior surfaces of the lungs and the pericardium could be seen. The sternum was carefully removed, leaving the needles transfixing the soft parts beneath it. The centre of the first bone was seen to correspond to the lower edge of the left subclavian vein, and to the arch of the aorta crossing the

trachea. The centre of the second bone corresponded to the right side of the ascending aorta, and to the upper edge of the appendix of the right auricle. The third needle passed into the right side of the right auricle, and the fourth into the right ventricle. Another needle penetrating the chest at the upper edge of the cartilage of the fifth rib, close to its costal extremity, entered into the septum of the ventricle; the point of the heart was about an inch and a half below this, and inclined to the left side.

The pulmonary semilunar valves corresponded to a spot a little below the centre of the third bone of the sternum, the aortic valves were a few lines below and behind the pulmonary, and the mitral were still more deeply seated, and a little lower also than the aortic. The origins of the pulmonary artery and aorta are slightly below, and to the left of, the centre of the third bone. The pulmonary artery passes upwards, touching the sternum, inclines to the left, and may be found between the second and third ribs, close to the sternum: the aorta ascends to the first bone, crosses it, and then forms the arch.

One third of the heart, consisting of the upper part of the right ventricle, and of the whole of the right auricle, is situated immediately beneath the sternum, and the rest, being the remainder of the right ventricle, the left ventricle, and auricle, to the left of that bone.

Nearly the whole of the anterior surface of the heart is formed by the right auricle and ventricle, a small portion only of the left ventricle and its point, and the appendix of the left auricle, forming a part of that surface. The left auricle and the greater portion of the left ventricle form the posterior surface.

The pericardium invests the heart from the diaphragm to the commencement of the arch of the aorta.

Percussion.

The heart being a solid body, at least in relation to percussion, ought to give a dull sound upon striking the parietes of the chest covering it; but perhaps from its being imbedded, as it were, in the lungs, and from its being partially also covered by them, the sound is not so fleshy as that produced by striking over the liver, or the pulmonary substance, consolidated by hepatization, or compressed by a fluid. The sound on percussion is something intermediate between that produced at the upper part of the sternum and the muscular parts of the body. The sounds also are still duller and more uncertain when the parietes of the chest are charged with fat, or are infiltrated with serum.

All lesions, however, which by their action distend the pericardium, increase the dulness of the sound upon percussion, as hypertrophy and dilatation of the heart, the dilatation of the auricles or ventricles, hydro-pericarditis, accumulations of blood in the pericardium, &c.

Auscultation.

There are four points of view in which the heart may be examined with reference to auscultation.

1. *The extent* to which the beatings of the heart are heard upon the thoracic parietes.

2. *The impulse* or *shock* communicated to the ear of the observer, by the movements of the heart.

3. *The rhythm* of the movements of the heart.

4. The nature of the *sounds* produced by the heart's action.

1. *Extent of Pulsation.*—When the ear or the stethoscope is applied to the precordial region, the beatings of the heart are usually heard most distinctly all over it. There are but few exceptions to this rule. It sometimes, however, occurs, that in individuals who are very fat, or whose thoracic parietes are infiltrated with serosity, that these beatings are confined to a space not greater than the circumference of the stethoscope, or the sounds of them may even be almost entirely lost. If extensive catarrh be united to the above-described conditions, the deep sonorous wheezing tends still farther to mask the cardiac sounds. In all ordinary cases, the pulsations are perfectly evident over the space corresponding to the inferior half of the sternum, and to the cartilages of from the fourth to the seventh ribs. The movements of the right side of the organ are heard in the former region; those of the left, in the latter. If the sternum be short, they can also be distinguished in the epigastrium.

If the heart be heard beating only at the points I have just described, it may be considered to be of good proportions.

When the heart increases in its volume, the sounds of its movements are heard, with equal, or nearly equal, intensity, to an extent over the surface of the chest proportionate to that increase: thus, if it be slightly enlarged, its pulsations are distinguishable on the left side of the chest from the axilla to the region corresponding to the stomach; if larger, its sounds may be heard to the same extent on the right side; if the organ be of very large proportions, then its beatings are audible on the left side of the spine, and, finally, though rarely, on the right.

When, also, the heart is of its normal size, or nearly so, the extent of its pulsations may be modified by the thickness of

its parietes: thus, if they be very thin, the sounds are more extensively heard than in their natural state; if they be thick or hypertrophied, the pulsations are often concentrated in a small space. When, however, the cavities of the organ are dilated, and their walls are thickened, then the heart is occasionally enlarged to an enormous volume, and its beatings may be heard all over the chest.

The following observations may be made upon this subject:—1. That the extent of the pulsations of the heart is increased whenever its volume increases, especially if the augmentation of the size of the organ depends upon the enlargement of its cavities, combined with hypertrophy of their parietes. 2. That although the heart be of its natural size, or nearly so, if its parietes be thin the sounds of its beatings will extend beyond the precordial region; this probably depends upon the increased *loudness* of the sound, which we shall hereafter describe to exist, under these circumstances. 3. That in concentric hypertrophy of the heart, where its walls are thickened, and the capacities of its ventricles proportionately diminished, the pulsations are not heard, or at least but extremely slightly, beyond the cardiac region; and sometimes even they are not distinguishable, except upon a spot equal in surface to a square inch.

Are there any exceptions to the rule, that the extent of the pulsations of the heart is proportionate to its volume? There are several, and it is of the greatest importance to understand them, as I find that, practically, constant errors are made upon this subject.

In the first place, any cause which renders the lung solid, will occasion it to be a better conductor of sounds of the heart, and consequently increase the extent of the surface of the chest over which they may be heard; as hepatization, or even the firm parietes of a tubercular excavation. Fluids contained in the pleuritic cavities will produce the same effect. The extent of the sounds is greater in persons having narrow and contracted chests; the heart then, although perhaps of its natural size, has not sufficient space to perform its movements freely, and therefore is too large for the diminished capacity of the part in which it is placed. The hearts of children are also larger proportionately than those of adults, so that their pulsations can be distinctly heard all over the thorax; and, finally, the extent of the pulsations is always increased by any cause tending to accelerate the movements of the organ; as nervous emotions, fevers, &c.

To determine the volume of the heart, attention then should be paid to the configuration of the chest, to the age of the patient, to any alarm he may feel from the mode of your examination, and to febrile action augmenting the frequency of the pulse. Even then do not hurry to a conclusion, but make repeated and daily examinations before you form a diagnosis.

2. *Impulsion.*—By *impulsion* or *shock* is meant the sensation of elevation communicated to the ear of the observer, in consequence of the heart striking the parietes of the chest with a certain force.

The stethoscope renders this elevation much more evident than the application of the hand; the shock often cannot even be distinguished by the sense of touch. Sometimes, too, in those persons who are agitated at the moment of examination, a considerable impulsion will be given to the hand, which the stethoscope shews to consist of but little real increased force of the action of the heart. Care must be taken not to mistake the impulsions of the heart's movements for the short and rapid inspirations which occasionally take place in dyspnœa. A very slight attention will render such an error impossible.

This proposition may be advanced relative to the force of the heart's action;—that the intensity of its impulse, or shock, is in a direct ratio to the thickness of its parietes, and in an inverse ratio to the extent of its pulsations.

In the natural state of the heart, its impulse is but slight, and in persons of a certain degree of obesity it is not to be distinguished; but if the organ be slightly thickened, and its movements quickened by nervous agitation, running, palpitations, or febrile action, then its impulsions become exceedingly evident: the shocks are still greater, if the hypertrophy be considerable; they then distinctly elevate the head of the observer when applied to the chest. If the hypertrophy be extreme, the impulsion is affected in a progressive manner: the heart at first seems to swell, is applied upon a point only to the corresponding surface of the chest, then upon its whole surface; finally, it gives its shock, and instantly recedes, to recommence the same series of movements: to this recession, described by Laennec, Dr. Hope gives the name of *back-stroke*. The impulsion is felt during the contraction of the ventricles.

The force of the impulsion is always proportionate to the thickness of the parietes of the heart: if the hypertrophy be great, the shock is great also; if the walls of the heart be thin, no impulsion whatever can be distinguished.

When the heart is in a state of simple or concentric hypertrophy, its impulse is felt in the precordial region only, and sometimes even in a small part of it; if, however, the hypertrophy be eccentric, or combined with dilatation, the heart then

acquires the largest possible proportions, and the shock of its pulsations may be felt all over the chest. It is in the latter case that the impulsions are so great as to communicate their vibrations to the person of the patient, and even to the bed on which he is placed.

All causes by which debility may be produced diminish the impulsion of the heart's movements—as repeated bleedings, continued diarrhœa, low diet, digitalis, &c. Even in very marked hypertrophy of the organ, a severe dyspnœa may produce the same effect, particularly when the difficulty of breathing arises from pneumonia, pleurisy, œdema of the lungs, a paroxysm of asthma, or the congestions which form during the agonies of death. Nothing, therefore, should be concluded from an examination under such circumstances.

3. *Rhythm of the beatings of the heart.*—By rhythm is meant the order of succession in which the contractions and dilatations of the heart occur, and the relative time occupied in effecting each movement.

It is perhaps impossible to determine the size of the heart, compared to the rest of the body: usually, Laennec asserts, it is a little less, or equal, or it slightly exceeds, that of the closed hand of the subject. The parietes of the left ventricle are almost double the thickness of those of the right, and their tissue is firmer and more compact than that of the rest of the muscles of the body. The walls of the left ventricle should not depress upon being cut into. The right ventricle is somewhat larger than the left, its carneæ columnæ are more voluminous, and a section of the parietes of the cavity causes them to fall inwards upon it.

If the finger be placed upon the radial artery, and the stethoscope be applied at the same time to the region of the heart, the following phenomena may be readily distinguished, if the organ be in good proportions.

The instant the artery strikes the finger, a slight elevation is communicated to the ear through the stethoscope, by a movement of the heart; this is accompanied by a dull sound. The isochronism of the movement and sound, with the elevation of the artery, shews distinctly that the phenomena are due to the contraction of the ventricles, since the arteries cannot be elevated except by the ventricular systole.

Immediately after this ventricular movement and sound, a louder noise is heard, the duration of which is considerably less than of that just described; it is unaccompanied by any sensation of impulsion or shock, and is similar to those produced by the clacking of a valve, the smacking of a small whip, or the lapping of a dog. This sound Laennec attributed to the contraction of the auricles; we shall presently examine the correctness of this opinion.

Directly following the second sound, there is a period of repose, the duration of which is equal, or nearly so, to the second sound itself. At the termination of this repose of the movements of the heart, the ventricular contractions recommence.

According to Laennec, the rhythm, or relative proportion of time, occupied by the beatings of the different parts of the heart, and the period of repose, is as follows; and for the purpose of elucidating this subject, let us suppose that the successive movements and repose occur in one second—that time would be thus divided:

The impulse and first sound, caused by the ventricular contraction, half a second.

The second or louder sound, caused by the auricular contractions, quarter of a second.

The period of repose, quarter of a second.

Such are the succession of phenomena which may be distinguished by auscultation. The cause of one of the sounds is, however, still a subject of dispute. Laennec asserted, that the feeling of slight impulse, accompanied by the first, or dull sound, was caused by the contraction of the ventricles: this is accorded to him; for the simultaneous elevation of the arterial pulse incontestibly proves it. He ascribes the second, or clicking sound, to the contraction of the auricles: this is denied by Dr. Hope; and I think he has succeeded in establishing his refutation, and in proving its real cause.

Dr. Hope examined the movements of the heart in several living animals, of various sizes, after depriving them of sensation, and keeping up respiration by artificial means. He saw, upon opening the pericardium of the ass, that the auricles first contracted by a vermicular and slight action, which was continued to the parietes of the ventricles; that when that movement arrived at the ventricles, they instantly contracted, and propelled the blood into their emerging vessels; the point of the heart then striking the parietes of the chest. Dr. Hope, at the moment of the ventricular contraction, applied the stethoscope to the naked surface of the ventricles, and distinctly felt the impulsion of their movement, and heard the first sound, and found that they accorded, or nearly so, with the elevation of the arteries; proving that the first sound, the impulsion, and the arterial pulsation, depended upon the contraction of the ventricles. The moment the ventricles ceased to contract, they receded from the parietes of the chest, and

became dilated and swollen. The stethoscope, according to Dr. Hope and numerous assistants, then communicated the second sound,—proving, if the facts were well observed, that it did not depend upon the auricular contraction, but upon the ventricular dilatation. It was then observed that the heart remained for a short time in a state of repose, during the latter part of which the auricle again commenced its vermicular contraction, which was immediately again followed by that of the ventricles, &c.

The time occupied by these states will now be as follows:—The ventricular contraction, half a second; the ventricular dilatation, a quarter of a second; the period of repose, a quarter of a second, the latter part of that period being interrupted by a certain quantity of blood entering into the ventricles, in consequence of the contraction of the auricles.

Such are the leading points of Dr. Hope's theory of the movements of the heart; for a more complete account, I recommend to you the perusal of his excellent work.

Impressed with the importance of this theory, especially in a pathological point of view, I repeatedly attempted to verify these experiments. I perfectly satisfied myself that the contraction of the ventricles coincided with the first sound, the impulsion or shock, and the elevation of the pulse; but I confess I could not as satisfactorily ascertain that the dilatation of the ventricles occasioned the second: I much doubt even whether I heard the sound at all, but it was evident that the successive movements of the heart were performed in accordance with Dr. Hope's description; and it was clear also that the contractions of the auricles were too slight to produce that sound. Although, therefore, I could not succeed in observing all that Dr. Hope describes, yet I fully believe his explanation to be the most rational. This theory singularly corroborates the description of the symptoms of the diseases of the heart given by Laennec, since it not only does not invalidate a single sign, but confirms and explains them all.

The rhythm of these movements is modified by disease; thus, if the ventricles be in a state of moderate hypertrophy, their contractions are less sonorous, and are of longer duration than usual, the period of repose being still well marked. If, however, the hypertrophy be considerable, the ventricles occupy a still longer time in contracting; these contractions are at first obscure, deep-seated, but augment gradually, elevate the ear, and terminate in a shock, unattended by any noise, or if any, it is a slight murmur, like that of respiration; the second sound is then of short duration, and nearly inaudible—sometimes it cannot be heard: the period of repose is then lost. In extreme cases of hypertrophy, no sound whatever is heard, except, perhaps, the slight murmur before described; but the ventricular contractions are manifested by a strong rolling movement, as if a large mass of solid flesh were irregularly and tumultuously revolving within the cavity of the chest. The second sound in this case is heard with great difficulty; now and then, however, two or three ventricular dilatations succeed each other rapidly and convulsively.

When the parietes of the ventricles are thin, the interval of repose is lost; the sounds of their contractions are louder than natural, and approximate in character to that of their dilatations; so that these movements often cannot be distinguished. The shock of the ventricle is also diminished—indeed, it may be said not to exist. If to these signs be superadded an increased extent of pulsation over the parietes of the chest, it may then be inferred that the walls of the ventricles are not only thin, but that their cavities are enlarged.

4. *Of the sounds produced by the movements of the Heart.*

The sounds produced by the movements of the heart cannot be heard by the patient himself, except he be suffering from febrile action or nervous palpitation, or in the case of these sounds being heard at a certain distance from the chest.

If the stethoscope be applied to the precordial region, two distinct sounds may be heard in the natural state; the one clear, short, like the clicking of a small valve, and corresponding to the dilatation of the ventricle; the other dull, longer in duration, coinciding with the beating of the pulse and with the sensation of impulsion previously described, and indicating the contraction of the ventricle.

The sounds heard in the right precordial region are produced by the right ventricle; those in the left, by the left ventricle. In the natural state, the sounds of both ventricles are similar; in their diseased state, they are often very dissimilar.

These sounds are the only phenomena which the beatings of the heart present, when they are heard on any other point of the chest than in the precordial region; for the shock or impulsion is generally confined to the latter space alone, except in cases of hypertrophy with dilatation of the ventricles.

The sounds produced by the beatings of the heart are always the loudest when the parietes of the ventricles are thin, and the impulsion feeble. When the ventricles are in a state of moderate hypertrophy, their contractions produce a dull sound

like an inspiratory murmur, and the clicking noise of their dilatations is less than natural. If the hypertrophy be extreme, the sound of the ventricular contraction is lost; a shock only is felt, and the dilatation is also to be distinguished with difficulty.

When the parietes of the ventricles are thin, the sounds of these contractions are clear and loud, and similar to that of their diastole. If their cavities be also dilated, the sounds become still more similar and equal in intensity; so that finally they cannot be distinguished from each other.

In the natural state, these noises are always most evident in the precordial region, becoming feebler at the remoter parts of the chest. In some diseased states of the heart they may be louder at other parts; as we shall hereafter describe.

It frequently happens, that in cases of hypertrophy, when nothing is felt in the precordial region but a noiseless impulse, and where the sound of the diastole of the ventricle can scarcely be heard, that the latter can be distinguished under the clavicles and even on the back; and in almost all slight cases, it is more evident in these situations than in the precordial regions, especially in persons possessing thin and narrow chests.

Of certain anormal sounds produced by the action of the heart and arteries.

Bruit de soufflet.—The heart, either in the systole or diastole of its cavities, and the arteries in their diastole only, occasionally produce a peculiar sound, often exactly similiar to that of the blowing of a bellows, from which analogy Laennec has denominated it "bruit de soufflet." There are certain modifications of this sound; hence he divided them into three species.

1. Buit de soufflet, properly so called.
2. Bruit de scie ou de râpe.
3. Bruit de soufflet musical ou sibilant.

1. *Bruit de soufflet*, properly so called. Laennec has most singularly stated that the bellows sound occurs only during the diastole of the heart and arteries; when, in fact, it occurs frequently during the systole of the ventricles. This sound, although precisely analogous to that produced by blowing a bellows, yet sometimes changes in its character both in the heart and arteries: it then becomes similar to the continued murmur of the sea heard at a distance, or to that caused by holding a large univalve convoluted shell to the ear. This latter sound is sometimes heard in the carotid and subclavian arteries on one side, while the ordinary bruit de soufflet occurs in those of the opposite side. It is isochronous with the arterial diastole, and most frequently exactly circumscribed by the caliber of the artery or ventricle producing it; sometimes it is, however, more diffused.

Bruit de scie ou de râpe.—This sound is much rougher, and, as its name indicates, is like those caused by the sawing, rasping, or filing of wood, when heard at a distance.

Bruit de soufflet musical ou sibilant—The musical or sibilating bellows-sound is, according to my experience, very rare: many of you have heard it very distinctly lately, in a lad in this hospital. This sound is generally preceded by the ordinary bruit de soufflet; it was so in the case I have just alluded to. Its characters vary: it is sometimes like that caused by the wind blowing through a key-hole, or to the resonance of a metallic cord which vibrates a long time after it has been touched.

These sounds, although not very intense, are yet perfectly appreciable; sometimes they consist of two or three notes: the instance I have mentioned consisted of two only.

The musical or sibilating bellows-sound is very rarely produced by the heart, and never in a very distinct manner.

The bruit de soufflet may exist in the heart and arteries with or without an increase of the force of their impulsion.

The bruit de soufflet may manifest itself at once in the cavities of the heart, and to a great extent of the arteries. Nothing is more uncertain than its duration, for it may be heard in the left carotid and not in the right, on one day—it may be reversed, or altogether absent, on the following—and so of the rest of the arteries. The musical sound continued in the right inguinal artery of the boy I have mentioned many days after it had disappeared from the carotids.

Proximate causes of the sounds produced by the movements of the heart and arteries.

It is not my intention to enter here into any elaborate detail of the various opinions entertained of the efficient causes of the sounds produced by the movements of the heart and arteries, because the time permitted me in delivering this portion of the course is not more than sufficient even to state all the facts, without entering into hypothetical speculations, and because also these speculations are of minor importance, compared to a perfect knowledge of the facts themselves; yet it may be necessary to say a few words upon this subject, although I shall be as brief as possible.

What are the efficient causes of the sounds produced by the movements of the heart in its natural state; and what are the causes of the anormal sounds denominated *bruit de soufflet*?

In relation to the first question, there are two sounds to explain: the first dull,

and corresponding to the contraction of the ventricles; the second louder, and synchronous with the dilatation of the same cavities.

There are two elements which enter into the consideration of these questions; which are, that these sounds can only be produced by the action of the solid structure of the heart, or by the blood entering into its cavities; or perhaps by the united movements of one and the other.

I believe that the first sound is caused by the point of the heart striking against the ribs. One, however, has thought that it was produced by the rushing of the blood into the ventricles during their dilatation; a second supposed that it was during that dilatation that the point of the heart arose to strike the ribs; a third, that the closing of the mitral and tricuspid valves, during the contraction of the ventricles, was a sufficient cause to produce the sound; a fourth, that it was effected by the rushing of blood into the arteries; a fifth, that it was to be accounted for by the collision of the particles of the blood itself in the ventricles, and, finally, that the contraction of the muscular fibres is the cause.

I believe, also, with Dr. Hope, that the second sound is caused by the ventricular dilatation; at least it is certainly coincident with it. Laennec supposed it to be formed by the auricular systole: we have, however, sufficiently discussed that question, and it is unnecessary to revert to it. But as there have been a variety of opinions as to the proximate cause of the first sound, so have there been also of the second: thus it has been supposed to be caused by the contraction of the ventricles; by the flapping of the mitral and tricuspid valves against the sides of their corresponding ventricles; by the striking of the blood against the parietes of the pulmonary artery and aorta; by the movement of the base of the heart against the chest; by the action of the arterial blood in closing the semilunar valves; by the impulse given by the blood in dilating the ventricles during the contraction of the auricles; and lastly, by the mere muscular action of the parietes of the ventricles in their dilatation.

Such, gentlemen, is a summary of the opinions entertained upon this subject. I can here enter into no further details, but refer you to the appendix of Dr. Williams's work upon Diseases of the Lungs and Pleura. Recollect, however, that these *facts* are proved:—that the impulse of the heart, the first sound, and the pulsation of the arteries, occur at the same moment, and therefore must be caused by the ventricular contraction; also, that the second sound, and a part of the time between two successive elevations of the pulse, are isochronous with the period of the dilatation of the ventricles, and that that sound is caused, in all probability, by the ventricular diastole.

The anormal sound denominated "bruit de soufflet," is equally difficult of explanation. When, however, it, or any of its modifications, exist, either in the heart or arteries, it may always be inferred that there is a mechanical obstruction to the current of the blood, or that these organs are under the influence of some peculiar and inexplicable state of the nervous system. If the sound be caused by mechanical obstruction, it is permanent, since the cause is so; but if it be the consequence of nervous disorder, it disappears with the affection that has caused, or, at least, is concomitant with it.

The efficient cause of the bruit de soufflet must be sought for in the parietes of the heart and arteries, or in the blood flowing within them. Laennec, after adverting to Wollaston and Erman's discoveries of the sounds produced by muscular movements, some of which are precisely similar to the bruit de soufflet, attributes the bellows sound to a vibratory action of the heart and arteries. Dr. Hope, and others, believe the sound to be caused by the movements of the blood; but in the latter case, it is impossible to explain why it should occur in one carotid, and not in the other; or in the subclavian, and not in the carotids; or in the inguinal artery, and not in the subclavian; or that in different days, or in different parts of the same day, it should so frequently change its situation. We cannot suppose that the blood changes its qualities so rapidly, or that it should differ so materially in vessels of similar caliber and distance from the heart, as to produce the sound in one carotid artery, for instance, and not in the other.

Fremissement Cataire.

Laennec gives the following description of this sensation, which is occasionally detected by the application of the hand upon the heart and arteries.

The *fremissement cataire* is almost exactly similar to the tremulous sensation produced in passing the hand upon the skin of a cat while she is purring; it may also be assimilated to the feeling caused by gently rubbing a hard brush over the palm of the hand covered by a glove. This tremor is commonly felt over the precordial region, or a part of it; or over the whole surface of the chest; and frequently, also, in the course of the larger arteries.

The arterial purring tremor is usually similar to that already described, and is exactly bounded by the caliber of the ar-

tery. It is felt by a slight pressure upon the vessel; but if the force be increased, the trembling diminishes: in this case it is saccaded, and not continuous. Sometimes, and especially in the carotids, the purring extends beyond the diameter of the artery, and is superficial, continuous, and not saccaded. The vessels in which the *fremissement cataire* is commonly found, are the carotids, subelavians, brachials, and inguinals. Laennec observes that it is rare in the ascending aorta, but I certainly have not found it so; it is, however, infrequent in the abdominal aorta, and it can only be felt there by considerable pressure. The purring is but little sensible in the smaller arteries; yet when it exists in the heart, or a great blood-vessel, or even when the bruit de soufflet is formed in them without the *fremissement cataire*, the pulse often presents a slight tremor corresponding to the arterial diastole.

The *fremissement cataire* of the heart and arteries is constantly accompanied by the bruit de soufflet, and appears to be caused by it. According to my experience, the intensity of the trembling is always proportionate to the loudness of the bellows-sound. Laennec, however, asserts that it is not always so, and consequently infers that the two phenomena are not determined by the same cause. I cannot help believing, after several years' observation, that, considering that these sensations are always perfectly synchronous, and that the force of the *fremissement cataire* is always in a direct ratio to the loudness and roughness of the bruit de soufflet; that it is, in fact, but one phenomenon, rendered evident to the tact by the vibrations communicated to the hand and to the ear, by the sounds they occasion.

The two sensations, then, have, I presume, identical causes; they may arise from organic obstruction to the circulation, or from nervous agitation. In the latter case, the purring is as uncertain as to its seat and duration, as the bruit de soufflet. If the cause be organic, like that sound it is always present in the same situation.

Of the Beatings of the Heart heard at some distance from the Chest.

It requires the application of the ear, or the stethoscope, to the surface of the chest, to hear the sounds produced by the pulsations of the heart. It very rarely occurs that these movements can be heard at a distance from the thorax. It sometimes, however, happens that these noises may be distinguished at a certain distance from the body. I have heard them two or three times, and in one instance at five or six yards from the patient.

I have also occasionally heard the bruit de soufflet at a distance from the individual; and have little doubt that, if this sound were constantly attended to in this point of view, it might frequently be heard when intense.

The cause of this phenomenon is extremely obscure. Laennec believed it depended upon the presence of air in the pericardium, or that air might even be formed in the cavities of the heart during the agonies of death, so as to occasion this sound. I mention it as a singular circumstance, that, in the cases of the beatings of the heart heard at a distance by myself, they occurred in females who were at that period under the influence of the catamenial discharge. I perceive, however, no connexion of cause and effect between these two events.

Laennec mentions another cause of this phenomenon, which is doubly interesting, on account of the fact itself, and on the probability of his having noticed it on his death-bed. It is the last page of his work, which I shall transcribe entire.

"At the moment they brought me the last proof of my work, indisposed for some days, I have observed in myself the phenomenon of the noise of the heart, sensible also to those around me; and I was enabled to distinguish an evident cause, altogether physical, and which, being of the same nature as that we have already spoken of, ought certainly to be much more frequent.

"I had just been bled in the foot, and placed myself in bed, where I rested a few minutes in a sitting posture, the back but slightly supported, and the head upright; finding myself very easy in this position. Suddenly I felt the contractions of my heart (a very rare circumstance with me), and I heard them also very distinctly. These contractions were regular, not unusual in their force, but had the frequence which a slight degree of fever occasioned. It seemed to me that, at each contraction, he heart slightly repelled a veil moderately tightened. I examined the region of the stomach, which I found very distended by gas, and strongly resonant by the slightest percussion. A person placed his head about six inches from my chest, and heard distinctly the beatings of my heart. From thence I began to think, that a certain degree of flatulent distention of the stomach, from its lying in such close contact with the diaphragm, might produce the phenomenon of which I speak. An instant after, I doubted no more, for an eructation of gas occasioned it to disappear."

[Under the head of Observations on Empyema, in the Table of Operations, in last lecture, *for* "of the third I have no account," *read* "of the fourth I have no account."]

OBSERVATIONS ON THE PATHOLOGY OF NERVES.

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[Continued from page 685.]

Tumors of greater magnitude imbedded in the substance of nerves are less frequent than the smaller, and are to be found commonly in the larger and deeper-seated trunks. These, like the smaller tubercles, are commonly attended with neuralgic affections in the distribution of the diseased nerve. In some of the cases there is also muscular spasm combined with intense suffering; but upon other occasions it is absent; and even sometimes the muscles are paralysed, or at least have defective power. Cheselden mentions a case of this kind, but his history is imperfect. It was situated in the centre of the cubital nerve, and occasioned a great numbness in all the parts that nerve leads to, and excessive pain upon the least touch or motion. The pain ceased with the operation, but the numbness increased a little. The operation here mentioned, as explained by the engraving, consisted in the removal of the tumor, together with a portion of the nerve at each of its extremities*. The filaments of the nerve ran over the surface of the tumor, and were separated from each other. In this case the ordinary function of the nerve was essentially impaired, the few undiseased filaments upon the surface bestowing a small proportion of sensibility only in the parts supplied by the nerve, the total division and removal of which could only "increase the numbness a little." The pain, therefore, produced by touch or motion was probably produced in the diseased portion, but, as in stumps, referred to a distant part; just as in Mr. Earle's case, wherein he supposed the axillary plexus of nerves to have been lacerated or crushed as they pass under the clavicle, the violent pain referred to the extremities of his fingers, which was occasionally produced in the "useless and paralysed limb" by any attempt to move it, and at times when perfectly quiet, was probably "excited where the nerves were injured under the clavicle, and the percipient mind referred it to the extremities, as is frequently the case after amputation*."

Sir Everard Home also has detailed two instances of this painful disease. Both were attended with excessive sensibility in the tumor, pressure upon which produced not only great suffering in the part compressed, but pains also in the distribution of the diseased nerves. The first of these two cases was cured by excision of the tumor, together with an adjacent portion of healthy nerve; the other, in which the operator contented himself with disengaging the tumor from the interior of the nerve, terminated unfavourably. "*In consequence of having been inflamed*, the cavity was lined with coagulable lymph, and almost filled with coagulated blood, as suppuration had not completely taken place." That, however, there was more than a mere tendency to the formation of matter, is to be inferred from the general practical conclusion, which Sir Everard himself draws from the two cases, that "the taking away three inches of a nerve is productive of less violent effects than are occasioned by inflammation and suppuration in the substance of a nerve for an equal extent†."

In the operative surgery of Sir Charles Bell‡ is related another interesting example of the same disease from mechanical injury of the popliteal nerve. This man appears to have died, worn out by the mere severity of pain. The peroneal nerve had escaped both the effect of the injury and the contamination of disease; its function was therefore perfect, excepting when from change of posture, as in sitting, it became subject to compression from the contiguous tumor. Then the parts supplied by the latter nerve lost their sensibility; and the case possesses an extraordinary interest, as presenting us with a striking illustration of the difference between morbid excitement in a diseased nerve, and paralysis from pressure in one that is healthy. The tumor in the popliteal nerve produced such agonizing pains in the parts upon which that nerve is distributed, as to destroy the patient; but when, in bending the leg, the peroneal nerve, which was *un-*

* Cheselden's Anatomy, Tab. xxviii. p. 256.

* Med.-Chir. Tr. vol. vii. p. 176.

† Trans. of a Soc. for the Improvement of Med. and Chir. Knowledge, vol. ii. p. 163.

‡ Vol. ii. p. 330.

diseased, became compressed between the tumor upon one side, the inner hamstring upon the other, the tendinous fascia immediately above, and the condyle of the femur below, the parts supplied by this nerve were immediately deprived of their nervous energy.

A gentleman, whose leg had been amputated in 1819, to free him from an exquisitely painful tumor of the thigh, consulted Mr. Lawrence, in 1828, on account of a tumor in the fore-arm, as large as a walnut, situated over the course of the ulnar nerve, and causing severe pain, with indescribable sensations, like electric shocks, upwards and downwards in the direction of that nerve. The disease was removed in February, 1829. "It was situated between the flexor carpi ulnaris and the bone, and *the nerve adhered so closely to it*, that a portion was removed with it. The part healed favourably, and remains well*." A similar tumor afterwards formed in the flesh of his stump; this was as large as a goose's egg, and produced most severe shooting pains in the part, with repeated recurrence of electric dartings from the stump into the body. The growth appeared to be prolonged to the tuber ischii, and was removed up to the bone. Mr. Lawrence has given no other account of these tumors, than that they were not malignant, although they were originally suspected to be so. But from their situation, character, and symptoms, it appears difficult to dissociate them from the tumors I have been noticing either imbedded in, or intimately connected with, and perhaps morbid growths of, the nerves affected. The resemblance between this case and that related by Sir E. Home is most striking, the only difference being in the nerve affected. In the former, the ulnar nerve was affected; in the latter, the musculo-cutaneous. Both were attended with severe darting pains in the course of the nerve: in the former, the nerve adhered so closely to the tumor, that in the removal of the latter a portion of the nerve was removed with it; "in the latter, the tumor terminated at its upper and lower ends in a strong white cord, which proved to be the musculo-cutaneous nerve," which led to the removal of a portion of the nerve. There is also another curious analogy to be observed between the case of Mr. Lawrence and the second of Sir Everard Home: this consisted in the proneness to the formation of similar tumors (nevromes) in other nerves. They are commonly imbedded in the substance of the nerve, but the direction of their growth may be influenced by external causes. If they grow towards the interior, fibres of the nerve will be found upon the surface of the tumor, as in Cheselden's case; if meeting with little resistance in the growth outwards, the nerve will appear behind, but attached to the tumor, as in Mr. Lawrence's case, and in one of those described by Sir Everard Home; but more commonly they are in the centre of the nerve, and a few scattered nervous fibrils may commonly be traced all around them. They are said to be encysted; and from the facility with which, in Sir Everard Home's case, they were detached by the finger from the thin membrane, probably composed of neurilema, which surrounded them, the opinion appears not without foundation, and is much confirmed by the observations of Cheselden, Marshall Hall, Windsor, Descot, De la Roche et Petit, Radel, Alexandre, Misd, Jolly, and Andral. M. Andral believes the larger tumors to be seated within the enveloping membranes of the nerves; sometimes to be a mere deposit betwixt the fibres of the nerves which are extended over the tumor like ribands, whilst others are consisting of many cysts, containing a jelly-like fluid; and others again of a single and larger cyst, of a fibrous or cartilaginous texture, containing matters of different character*. The smaller subcutaneous tubercles he pronounces not to be formed in the substance of the nerve, though some of the nervous filaments may be attached to them; and in this opinion he is supported by Dupuytren and Jaumes. I have, however, upon the whole, more confidence in the perspicuous statement of Camper, who had seen many cases in women, with whom all are agreed that it is more common than in the opposite sex, and who adds, "in viris plus semel ea (in nervis tubercula parva et dura) vidi: albicant intus, cartilaginæ duritiæ sunt reniden-tia et *intra nervorum tunicas* sedem

* Med.-Chir. Trans. vol. xvii. p. 33. The paper was read Nov. 8, 1831.

* Précis d'Anatomie Pathologique, vol. ii. p. 888.

habent;" and this confidence is much increased by the simple annunciation, by Mr. Windsor, of the facts, that in the course of the operation for the removal of such tumor, "a filament of a nerve was observed going to the part," the removal of which was immediately followed by numbness; and that "the little tumor, along with *the nerve which penetrated it*," was preserved and shewn to his friends Dr. Hull and Mr. Wilford*.

The size of the subcutaneous tubercle varies from that of a pin's head up to that of a horse bean, or almond deprived of its shell, and has been compared to a pin's head, a split pea, a flattened pea, coffee bean, a horse bean, and an almond. The larger tumors differ in bulk from that of a hazel-nut up to that of a small melon, which was the size of one removed with impunity, and indeed success, by M. Dubois†.

The smaller tumors are commonly whitish and pearly, and, according to Andral, fibro-cellular, or fibro-cartilaginous. In texture, they are described by the majority of writers as very hard, like cartilage‡, containing, in some instances, gritty or earthy particles§; and by some French writers, as resembling in character true carcinomatous scirrhus‖, and as having such an intimate alliance with that disease, as to lead M. Bejin, in his article Cancer, in the "Dictionnaire de Médecine et Chirurgie Pratiques," to designate the disease "cancer des nerfs." But this is an objectionable application of the term cancer; for although it has been asserted that the tumor has assumed the character of a "degeneration squirrheuse," yet no instance, as far as I know, has been seen on record in which it went on to the production of cancerous ulceration.

The larger tumors are rarely so firm in structure, or so distinctly fibrous in texture. These often consist of numerous cysts, sometimes containing materials of varied degrees of consistence; in some instances like transparent jelly¶—in others, encephaloid**—in others again, of a syrup-like consistence, interspersed with fibrous striæ*. But the most accurate description of these larger tumors is given by Sir Everard Home, who, speaking of the first which he extirpated, says, "it had the appearance of serpentine nervous fibres running in the course of the nerve; these were separated from each other, and the intestines filled up with the substance of the tumor; but that part of the tumor which was exterior to these fibres had something of a radiated structure†." The second tumor, which he removed from its matrix in the centre of the nerve, was of a yellowish-white colour; "when cut through, it was found to consist of a whitish firm substance, in the centre of which there was a very obscure fibrous texture, and towards the outer surface the texture was indistinctly radiated." A second tumor, much smaller than the one removed, in the same subject, was exactly similar to that from the arm of the first of these cases, except that the nervous fibres in the centre were rather more distinctly seen, the spiral direction of the fibres ‡ being readily distinguished by the naked eye; "in other respects it was exactly the same. The want of distinctness in those of the larger tumor may therefore be reasonably supposed to be the effect of the increase of size, by which they were rendered obscure §." Another great master of description has given us an account of the structure of a tumor which he removed:—"It was of firm texture, but not so hard as scirrhus; the swelling was covered with a thin white capsule, and was homogeneous; in compactness, toughness, and colour, it approached to the character of scirrhus‖:" and this account, in combination with the symptoms, like electric shocks, and with the attachment of the tumor to a nerve, a portion of which it was necessary to remove together with the tumor, is calculated to remove all doubts as to its seat and nature, and identifies it with the disease the pathological character of which I have been noticing.

Whether these tumors are to be considered as inflammatory products, has not been ascertained, and is of little

* Edin. Med. and Phys. Journ. vol. xvii.
† Alexandre, De tumoribus nervorum.
‡ Cheselden, Camper, Wood, Hall, Swan, Descot.
§ Windsor.
‖ Delpech, Dupuytren, Andral, Berard.
¶ Cheselden.
** Dupuytren, Descot.

* Descot.
† Med. and Chir. Trans. vol. ii. p. 156.
‡ "Des circonvolutions et des contours vermiculaires."—Descot, p. 248.
§ Home, op. cit. 159-161.
‖ Lawrence, in Med.-Chir. Trans. vol. vii. p. 34.

moment. If not the result of inflammatory, or of increased, at least they are the consequence of morbid action of the arteries of supply. That, however, they are occasionally attended with inflammation of the contiguous portion of the nerve, is matter of observation, the nerve having in some rare instances been found of three times its average dimensions; and in the case operated upon by Sir E. Home, the vessel of the interior of the nerve, from its enlargement, bleeding so profusely as to require the application of a ligature to restrain it.

Another question suggests itself upon this subject, which it may be equally difficult to answer;—this relates to the precise mode in which these tumors occasion the sufferings, which, as far as I have been able to collect, are their invariable result. M. Descot is of opinion that they act by keeping up a state of chronic inflammation of the nerve. No decisive evidence, however, has been adduced of this; it is stated merely as a matter of suspicion or belief, but without investigation and without proof: still it is far from improbable, though they may act also as mechanical irritants, to which their hard texture, often described as gritty, or gristly, or like grains of sand or cartilage, blunting a knife with which the attempt is made to cut through them, would naturally contribute; thus resembling in their influence the experiments of pathologists upon nerves with the point of a needle, a forceps, or a probe. Some, again, may think that they act by distention of the fibrils of the nerve; but the effect of such distention has been far from satisfactorily proved, and appears to be in great measure negatived by the observations and experiments to which I have before adverted.

But the decision of these points is of comparatively trifling moment. It is enough that these tumors, whether in the form of painful subcutaneous tubercle or the larger tumors in the trunks of nerves, produce, in point of fact, the phenomena of an "exaltation of function," rather than those of paralysis; or if this be not universally true, the exceptions are so rare, that they may be said, according to the old grammatical rule, to prove and establish, rather than to overturn, the general principle. "Exceptio probat regulam."

Such are the principal pathological conditions of a nerve upon which its excitement, productive of the consequence of a morbid excess and irregular distribution of nervous energy, have been found most frequently to depend. But occasionally none of these causes can be traced, and pathologists are then driven to adopt the alternative conclusion, that the symptoms result from mere functional derangement. This inference, however, involves a negative proposition, which, like other negatives, it may be difficult or impossible to prove, and which, in some instances, subsequent dissection has shewn to be an assumption contrary to fact. An exciting cause cognizable to the senses has been sometimes detected after death, where there had been no previous suspicion of its existence, either at the very roots of the nerves in the brain, or in the spinal marrow, or somewhere in the course of the nerve, or in the part itself which is the seat of the painful affection. An instructive example has been recorded by M. Serres*, of the most severe neuralgia arising from disease *of the root* of the fifth pair. It was examined in the presence of some of the most enlightened of the profession in Paris; but as it has been quoted at large by almost all subsequent writers upon this subject, it is unnecessary to give the details†. In the case of a late estimable physician, who was among the brightest ornaments of our profession, no suspicion, I believe, was entertained during his life, or at least until a very advanced period of his malady, that the tic douloureux under which he laboured so long, and so severely, as to make him an object of commiseration to all his friends, was more than neuralgia, a mere functional derangement, as distinguished from neuritis or other structural diseases; yet, after death, in the head, and consequently at the very origin of the nerves, there was found a spiculum of bone, which had proved a source of mechanical irritation, analogous in its effect to the successive and frequent excitement of a nerve by a needle or a forceps, the movement of the brain in the alternate actions of respiration, bringing, as it were, the nerve to the pointed instrument, instead of the

* Archives de Médecine, vol. v.
† Descot, Swan, Bell, Andral, Bejin.

experimental physiologist bringing his instrument of torture to the nerve. In some of the instances of tic douloureux related by Sir Henry Halford, the nerves, before their exit from the cranium, were incased in canals undergoing inflammatory action, the dura mater being in that excited state which led to large deposits of osseous matter, so as to form, in the forcible language of the eloquent President of the College, a complete "rock work."

In an instance of neuralgia of the posterior branch of the second cervical nerve, recorded in the admirable work of M. Ollivier, upon the Diseases of the Spinal Marrow, whilst paralysis had been produced by disease of the spine, the cause of the neuralgic affection was discovered after death in inflammation of that nerve *as it proceeded from the vertebral canal;* thus beautifully illustrating the important distinction between the effects of inflammation on the one hand, and of simple pressure upon the other*.

That the cause of neuralgia may exist at a considerable distance both from the ultimate distribution of the nerve affected and the seat of pain, and yet remote from its origin either in the brain or spinal marrow, is also a point well ascertained, and of which endless examples might be produced. I shall, however, content myself with once more referring to the cases recorded by Mr. Earle, Sir Charles Bell, and Mr. Denmark, as affording ample and conclusive testimony of the fact.

Lastly, the cause may act upon the seat of pain itself. It may not, indeed, be appreciable to the unaided senses, and yet we may be justified in inferring it from the nature of the producing cause, as in the instance of neuralgia from the prick of a gooseberry thorn, related by Mr. Wardrop; or a piece of angular porcelain imbedded in the lip, recorded by Mr. Jeffries; or a sharp point of a nail, by Mr. Swan; or decayed teeth, which become sharp, extraneous, and irritating bodies, as in the cases mentioned by Mr. Mitchell and Mr. Swan.

Still it is but candid to admit, in the absence of all proof to the contrary, that there have been cases, and those perhaps numerous, of most severe neuralgia, and perhaps local convulsive movement, wherein no perceptible morbid change, either of vascularity or of texture, could be traced in any portion of the nerve from which the parts affected derive their nervous energy. But the investigation of these cases of mere functional derangement presents to our view a field of inquiry so fertile in speculation and controversy, and so little promising in the prospect it affords of useful information, and, above all, is so little connected with the province to which I have restricted myself, that it offers little temptation to win me from the more immediate objects of my pursuit. I forbear, for these reasons, to do more than allude to this very extensive subject, and to tender my concession of a general principle, which, as must ever be the case with negative propositions, it may be more than difficult to prove; "for that sort of negative evidence in these cases is not quite satisfactory, because, in order to say that there was no state of disease in the nerves, it would be necessary to follow up the nervous filaments through their bony canals, and that would require a very long dissection. I believe that hardly any case has been examined in that way*." Besides, even where the examination has been so conducted, it may be with a nerve as it is with the brain; its "minute and subtle structure opposes an obstacle which must, on many occasions, be nearly insurmountable. Many changes may have taken place in so delicate an organ, unfitting it for the due and perfect performance of its functions, which changes may yet not be manifest to the senses. Morbid conditions of parts often exist without being discoverable by the eye or the touch of the practitioner. The change from healthy to diseased action, and still more from health to visible alteration of structure, is often by slow and imperceptible degrees†"

[To be continued.]

* Traité de la Moelle Epinière, et de ses maladies, tome i. p. 339.

* Lawrence's Lectures on Surgery, Med. Gaz. vol. vi. p. 645.—On Neuralgia.

† Clutterbuck on Fever, p. 163.

INHALATION IN CHEST DISEASES; WITH CASES.

To the Editor of the Medical Gazette.

SIR,

IF you should consider the following cases and observations to be of sufficient importance, I shall be much obliged by the favour of their early insertion in your journal.—I am, sir,

Your obedient servant,
CHARLES SCUDAMORE.

Wimpole-Street, Feb. 9, 1835.

Deeply impressed as I am, by continued experience, of the very important advantages to be derived from inhalation of certain medicated vapours in the treatment of chronic bronchitis, of some conditions of asthma, and even of that most formidable of disorders, tubercular phthisis pulmonalis, I owe it, as I conceive, no less to medical science than to humanity, to persist steadily in using my humble but sincere exertions to advocate the practice, and to be its defender, if defence it may require, through good and evil report.

I cannot help suspecting that objections are frequently raised against the inhaling treatment by those who have never made any trial of it, and who have no better grounds for their opposition than some theoretical notion, or, what is less worthy, some prejudice—some objection to any innovation, as it is called, on the accustomed method of practice. And let me ask any candid person who reflects for one moment on the subject, what are the almost invariable results which flow from the ordinary proceedings of the physician with consumptive patients? Change of climate is for the most part the proposed remedy; and, with a few happy exceptions, does it not generally happen that a foreign grave receives the destined victim of the disease? If a distant removal from home be inconvenient from circumstances, or for any reason objected to, some routine treatment is tried at home; as, probably, the employment of *dry* emetics, upon empirical principles, rather than upon any theory with which I am acquainted; of digitalis, with the intention of retarding the circulation; of a milk and vegetable, or very slender diet, with the same view; of small bleedings, and the application of leeches and blisters to the chest, on the idea of a chronic inflammation of the lungs. But with how little success these or any of the usual methods are employed, the Bills of Mortality, and the history of consumption, afford too melancholy an example. It must therefore be admitted on all hands, that a new treatment of pulmonary consumption is called for; and that any one who quits the beaten path in which failure has always marked his steps, does not enter upon a new one with the hope of better success, as a wanton adventurer merely pursuing novelty and change.

Some persons appear to call in question the propriety of employing any active agent to be administered by inhalation, asserting that the danger of producing injurious irritation to the air-passages and the lungs is more certain than the chance of removing the tubercular disease. The fact, however, is, that in no form of pulmonary complaints does inhalation relieve with so much promptitude and certainty as in chronic irritation of the bronchial mucous membrane; and with regard to the tubercular part of the disease, I am willing to rest the whole proof of my recommendation upon actual experience, of many years' standing, which has yielded me a larger share of success than I ever expected to obtain.

It unfortunately happens, that in a large proportion of consumptive cases there is too great an extent of organic disease to be reached by any treatment; in many instances also the disease has from neglect acquired so much inveteracy as to be incurable. It does, indeed, too commonly happen that no attention is paid to the first inroads of the disease, which makes progress with sure but insidious march; and when, at last, an anxious appeal is made for medical assistance, the lungs may have undergone such extensive disorganization as to allow of no other possible relief than some mitigation of the symptoms.

Failure of success on such occasions ought not to impair the credit of the mode of treatment which I am advocating; but I am too well aware that this serious disadvantage to the *good character* of inhalation is always more or less incurred when the case ends fatally, notwithstanding that only slight, if any, hopes of success might have been held out to the friends of the patient; for

with regard to the patient himself, we must sustain his mind by kind encouragement: the despondency of the invalid would greatly diminish our power of affording relief.

In conclusion, I have to express, as my most frequent cause of regret, the delay of the patient to make a timely application for the material benefits to be afforded by inhalation; for although there is a satisfaction in mitigating sufferings, the task is a melancholy one of watching the progress of a disease which has become incurable. I cannot help stating my belief, that a considerable cause of the supine indifference amongst invalids towards this new method of practice is to be ascribed to the medical profession itself: there appears to be a reluctance amongst medical men to inquire into any real merits of this plan of treatment, which is rather more troublesome in its details than the prescribing of the more usual forms of medicine.

For the better comprehension of my statements in the following cases, I take the liberty of referring the reader to the second edition of my work *, in which I have fully detailed my principles and method of treatment.

Case I.—J. A., æt. 47, a superintendent of a gas district, tall, and well proportioned, of delicate constitution. His father, and mother, and uncle, had died from consumption. He consulted me in January 1834. He was very thin, and stated "that he had lost almost all his flesh and strength, and feared he was past help." He had been ill with cough and shortness of breath since the beginning of December, having caught cold from continued exposure to a N.E. wind. I found his pulse from 96 to 106, and feeble; the respiration was distressingly hurried by slight exertion; the animal heat was 101°. By auscultation, great obstruction to the breathing was manifested, and the sound on percussion was dull; these indications being most remarkable on the right side. The sputum was greenish in colour, viscid, and ragged, and, examined by the optical experiment, did not present the prismatic colours; the tongue was morbidly red; the appetite impaired; the bowels prone to diarrhœa, and occasionally painful, as if from colic. He had sometimes two hectic paroxysms in the day, and always one; night perspiration was more or less abundant, and he never obtained comfortable sleep.

I directed the inhalation of a solution of iodine and hydriodate of potash, with the addition of a saturated tincture of conium (for the formula, see my second edition, and Medical Gazette, vol. viii. p. 157) three times a-day; the internal use of sarsaparilla and alkali twice in the day; and at night, the acetate of morphia, with diluted sulphuric acid, water, and syrup of tolu. The chest was washed night and morning with the lotion of purified pyroligneous acid, eau de Cologne and water, used just tepid, followed by the use of the flesh-brush. The diet was nourishing and supporting.

The means of treatment agreed; but as I was convinced that the lungs were obstructed by tubercles which would soften, I viewed this as a case which, in the most favourable event that could happen, would become much aggravated in its symptoms before any convalescence could take place; in other words, he would get worse before he could get better.

From taking cold again, he lost his smell and taste, and suffered much pain in the right side of the chest from a subacute attack of pleurisy, which was removed by blistering; and till this relief was obtained, the inhaling had been suspended. He described that he felt very sensible relief from the inhalations; and that not only was his chest comfortably relieved, but his appetite, he thought, was always improved after the process. The intestinal canal continued to be frequently irritable, and also painful. He received relief for this state of complaint from a mixture of infusion of catechu with mucilage, tincture of kino, compound chalk powder, and Ford's laudanum (a saturated tincture of opium with the addition of spices). He took occasionally at bed-time, when there was evidence of vitiated biliary secretion, small doses of the hydr. c. cret. joined with pulv. ipecac. comp.

A journal of this case would occupy too much space; I shall content myself, therefore, with a brief general statement. At the middle of March it was evident, both from the general signs and the local indications, that the expected softening process in the tubercles was ad-

* "Cases, illustrating and confirming the remedial power of the Inhalation of Iodine and Conium in Tubercular Phthisis, and various disordered states of the Lungs and Air-passages."

vanced. He was thinner and weaker, and his ankles were swollen towards night; the expectoration was increased in quantity, was more or less puriform, and often coloured with blood; the night sweats were usually profuse. In the right axilla I detected by the stethoscope a resonance approaching to pectoriloquism. The sound on the right side was dull to a great extent, and the breathing very imperfect. For the most part he maintained a tolerable appetite, but his appearance was altogether so unpromising, that I almost despaired of any success.

He persevered with unabated confidence in the inhaling. I changed the iodine for chlorine for a short time; but of his own accord he returned to the use of the iodine, judging from his own feelings that it was by far the most useful. When the bowels became settled I gave him the mistura ferri composita, and changed it at the end of a fortnight for the mixture of sarsaparilla with alkali, occasionally interposing a dose of quinine, according to circumstances. I directed some porter and a little sherry, with as substantial and nutritious food as his digestive powers would allow.

At the end of another fortnight, pectoriloquism in the right axilla was unequivocal; the expectoration was abundant; and the sputum examined by the optical means gave prismatic colours. The respiration was become less restrained; there was an abatement of the hectic fever in the day; and the night perspirations were much diminished.

From this period he improved, steadily pursuing all the means of treatment. I saw him at the end of November, when his appearance was so changed that I scarcely recognised him as the same individual when he first consulted me, so wonderfully was he recovered in flesh and strength, with his spirits quite regained. His pulse was 76 to 80; the animal heat 98°. At that time he returned to his regular employment, in which he has continued without interruption, and I have the satisfaction of learning that he remains in the enjoyment of comfortable health.

Case II.—A gentleman, aged 26, of the middle height, muscular, of the mixed temperament, well formed in the chest, usually enjoying good health, with the exception of a liability to take cold and have a catarrhal cough in the winter season, caught cold from exposure for some hours on horseback to a north-east wind, in March, 1834. Inflammatory symptoms, with pleuritic pain, occurred, for which general and local bleeding was used, with blistering, and an antiphlogistic treatment.

I saw him first in the beginning of June, and received the following account of his case from Dr. Skrimshire, of Peterborough, in Northamptonshire. "This patient is the subject of recent, but rapid, tubercular phthisis." Then, detailing the treatment which had been used, he adds, "I have not, however, at any time reduced the rapidity of pulse, or the urgency of the cough, for more than a day or two. The wasting has been progressive and rapid; and the expectoration, though never profuse, has for the last three weeks or a month been puriform."

I found the sound dull on percussion over a considerable extent of the left side; the respiration imperfect; and near the axilla the indication of pectoriloquism was sufficient to render it probable that a small cavity existed at the upper part of the lung. The signs on the right side were good. His breathing was more hurried on slight exertion; the cough was harassing; the morning expectoration was considerable, creamy, of disagreeable odour, and gave prismatic colours. He was suffering from slight pleurisy of the left side. He could not sleep without having the head and chest raised, nor lie well on either side. He had been more sensible of daily hectic fever and night perspirations a month before, than at the period of my visit. The pulse ranged from 112 to 120; the animal heat was 101°. He had greatly lost flesh and strength, and his pale and hollow cheeks proclaimed at once the severe character of his disease. It was encouraging that his appetite was for the most part good, and that the digestive functions were not much disturbed; but the urine deposited lateritious sediment very abundantly.

So soon as I had removed the pleuritic pain by local treatment, I directed the inhalation of iodine with conium, and treated him altogether on the principles which I have described in the statement of my other cases.

The patient improved from the first day, and derived the most sensible relief from the inhalation, which, according to his feelings, moderated the cough,

facilitated his expectorating, amended the character of the sputum, and very remarkably rendered his respiration more comfortable.

At the end of July his recovery was so advanced, that he had materially gained flesh and strength, and was almost free from cough, breathing comfortably. The pulse was regularly under 80, and the animal heat was reduced to 97°.

I have seen this gentleman lately, and have the satisfaction of adding that he finds himself quite well; his pulse 68. In the autumn he took a journey to Paris, and now he is engaged in active business.

Case III.—A young gentleman, aged 22, tall, slight, with circular chest, of the nervous temperament, while labouring under great mental excitement, which was quickly followed by inflammation of the membranes of the brain, exposed himself in a state of delirium to the cold night air, when without clothes. Bronchitis in the acute form ensued. He lost blood by the arm and by leeches, and blisters were applied. It was observed that the severe symptoms affecting both the head and the chest alternated remarkably, so that at times one disease appeared to supersede the other. This happened, however, only during the height of the illness. When I first visited the patient, I found him extremely emaciated; he was pallid and exhausted, and his whole appearance that of a person in the last stage of a dangerous disease. He was scarcely equal to the least conversation; and if any exciting topic was touched upon, he became delirious. The eyes were bloodshot; he could not bear light or noise; said that his nights were almost sleepless, and when he did sleep his dreams were most distressing. Both the upper and lower extremities were affected at night, and sometimes in the day, with violent jactitations. He described that his brain often seemed to be "on fire," and that it was his greatest comfort to have his shaved head washed with the coldest water. He felt his chest bound as if with cords; the breathing was uneasy; cough was frequent, and often exhausting, from its severity and long continuance; the expectoration was in very large quantity, of highly puriform appearance, much coloured with blood, and of offensive odour. The pulse ranged from 120 to 130, and under excitement it ran on to 140, or upwards; the animal heat was 102°. Hectic fever was urgent, as shewn by the deep rosered of his cheek, the brilliancy of his eye, and general heat of surface, succeeding to fits of chilliness; and on most nights the perspiration was excessive. The urine was of a dark colour, and deposited lateritious sediment in the greatest abundance. On the right side, over the upper part, the sound was dull. The voice gave much resonance to the ear with the stethoscope, near the axilla. It seemed very probable that some ulceration had taken place. His powers were so much prostrated, and his nervous system so exquisitely sensitive, that I could not consider him equal to the task of inhaling. I directed a blister to the chest, and the following mixture:—

℞ Potassæ Bicarbon. gr. cviij.; Succi Lemon. ℥ij.; Mist. Amygd. ℥iv.; Syrupi Tolutani. ℥ij.; Acidi Hydrocyan. ♏x.; Gutt. Nigr. gtts. xv.; Potassæ Nitrat. ℈ij. M.

Of this two table-spoonfuls were taken every four hours. He derived great relief from this medicine; but his sleep being still deficient, I prescribed a small dose of the morphine syrup at night, and its effects were most satisfactory.

He gradually improved in the state of the nervous system, but as the brain acquired a more healthy condition, the pulmonary symptoms became more urgent. The cough sometimes continued for an hour without ceasing; and the expectoration, which was uniformly more or less coloured, was in quantity upwards of a pint in each twenty-four hours.

I was resolved not to delay longer the trial of inhalation, and began with a small proportion of the iodine solution joined with the saturated tincture of conium. At first he experienced great giddiness and sickness, and could only inhale for five minutes. He was in so weak and nervous a state (scarcely able to raise himself in bed) that he was timid, and alarmed at the idea of the new treatment. With better courage, however, he resumed it on the following day; and I was highly gratified to hear him, in a short time, express in glowing terms the delightful relief which he experienced from inhaling, which he

said not only relieved his cough and breathing, but, "calmed him all over." After the first day of inhaling, the jactitations of the limbs were abated; after the third day they ceased altogether. Many of the symptoms remained urgent for a week;—the quick pulse; the breathing easily hurried; the cough much excited by any continuance of conversation; hectic fevers at mid-day severe; perspiration at night excessive. But some appetite returned. The nerves were in a more tranquil state, and much sleep was procured every night. Some decoction of bark was added to the mixture. The bowels required regulation, and a pill with pilul. aloës c. myrrh. et pulv. Jacob. answered perfectly. In other cases I have mentioned the remarkable reduction in quantity, and alteration in quality, speedily produced in the sputum by the influence of the iodine inhalation; but I never witnessed this effect more strikingly produced than in the present instance: within three days the quantity was lessened by one half, and it was much less coloured. At the end of a week it did not amount to more than four ounces, and in another space of ten days it was reduced to an ounce, with here and there only slight streaks of blood.

From this period he steadily improved, gaining appetite, strength, and flesh. When in a state of perfect quietude the pulse did not exceed 80; the animal heat lessened to 98°. His spirits, which were naturally buoyant, revived, and he became confident of recovery. For many weeks, however, his condition appeared doubtful; for cough with coloured expectoration continued troublesome; night sweats were occasionally profuse, and after sitting up some hours, the ankles become much swollen. He continued to inhale with regularity and with unabated satisfaction. He used eau de Cologne, &c. for the chest, and the flesh brush, with sensible benefit. He took sulphate of quinine with sulphuric acid, &c. two or three times a day, and the morphine syrup at night. His diet was of the most restorative kinds.

I have now to conclude with stating that this patient has perfectly recovered his health, and is indeed considered by his friends to look stouter and more healthy than before his illness. He was visited once during my attendance by Dr. Watson; and frequently by Mr. Vickers, of Baker Street.

Case IV.—A gentleman, aged 24, of circular chest, of the mixed temperament, after wearing in his cheeks a colour like hectic flush, of a very consumptive family, was attacked with troublesome cough about four years ago. The expectoration was occasionally coloured with blood, and he found for the first time that his breathing became distressingly hurried by slight exertion. He had lost flesh and strength within a short period, and was much alarmed, as were also his friends, with the dread of pulmonary consumption, from which a brother and sister had died. The indications afforded by auscultation rendered it almost certain that his lungs were tuberculated, although not *en masse*. He inhaled iodine and conium with the greatest advantage; but being of an active disposition, and disliking confinement within doors, he went to Madeira, where he passed the winter and spring two years in succession. The last winter he passed at Lisbon. During his residence at that place, he caught cold, which was followed by cough, attended with coloured expectoration (which he spoke of as spitting of blood) every day for a month. He sent to London for an inhaler, the mixture of iodine, tincture of conium, and the internal medicines which I had prescribed for him on a former occasion.

He did not receive the articles till the expiration of a month.

A medical friend in attendance upon him, used his strongest persuasions to dissuade him from inhaling, under the circumstance of a troublesome cough attended with coloured sputum, assuring him that in all probability a dangerous hæmorrhage from the lungs would follow. He however, fortified by his former experience, was resolved to adopt the treatment; and accordingly he inhaled the iodine with conium. He informs me that after the space of three days, the blood entirely disappeared from the expectoration; the cough was satisfactorily relieved; and in a short time he recovered his health.

Case V.—A young woman of delicate frame, and rather narrow chest, in the year 1825 suffered from cough and difficulty of breathing, for which she was bled twice from the arm, and blistered repeatedly.

In 1827 blisters were used; and she took digitalis with some relief of the

shortness of her breath, but with injury to her stomach and nerves.

During the two following winters, blisters were applied.

In 1830 I was consulted, when she was suffering from very troublesome cough, short breathing, a sense of tightness and of soreness in the chest, without any fever. Her breathing was like that of an asthmatic person, and always became distressed under the least exposure to a foggy atmosphere. She was getting thin and weak, and she had also a consumptive look.

I directed the inhalation of iodine and conium, in conjunction with the washing and friction of the chest; and no other treatment was employed. Suffice it to say, that she recovered in the most favourable manner.

Captain Kater, in whose service the patient lived, informs me that since the period of my attendance she has but rarely been affected with her complaint; and has, on each occasion, obtained relief in a few days, from having recourse to the inhalation.

I could multiply examples equally in favour of the value of inhalation of iodine and conium with those which I have stated, but I fear to trespass further on your pages, and hope that I have offered proofs sufficient.

I will take the opportunity of mentioning that the patients, whose cases of confirmed tubercular phthisis with ulcerated cavities, are detailed in the additional part of my second edition, at p. 138, c. i.; p. 184, c. ix.; p. 194, c. xi.; all continue to enjoy their recovered health, bearing the most happy testimony * to the benefits derived by them from inhalation, and the collateral treatment.

It is my earnest recommendation to the profession to give a fair trial to the practice, and to use due *perseverance*, without which success must not be expected. I have not allowed myself to lose hope from the slow progress of amendment, or even from the contrary, from those occasional relapses which are incidental to the disease. I am certain that the plan of inhalation, &c. is often abandoned much too hastily, and for very insufficient reasons.

In conclusion I will again observe, that no one should allow himself to think slightly of the method of treatment because in many cases it will not prevail over the inveteracy of the disease. No human means can succeed in the worst cases of pulmonary consumption; but it is my sincere conviction that the best chance is given to the patient by the combined means which I have endeavoured fully to describe in my little volume; and it is not immaterial to add, that the remedies, in my experience, have never failed to render the comfort of largely mitigating the symptoms, even when the amount of disease has been too great to admit of cure.

* The several patients who have recovered have expressed their desire that I should refer to them any consumptive invalids, or their friends, who might wish to be assured of the advantages of the inhaling treatment.

A FEW OBSERVATIONS

ON THE

PARALYSIS PRODUCED BY LEAD;

With Cases.

By H. M. Hughes, M.D.

Since the publication of the admirable essays of Sir George Baker, in the first volumes of the Medical Transactions, little or no doubt has existed among the generality of the profession that colica pictonum, with its attendant or subsequent paralysis, usually, if not universally, arises from the operation of lead. But how this effect is produced—upon what part the mineral primarily acts—whether its influence is exerted upon the cerebro-spinal axis, upon the nerves of the parts implicated in the disease, or upon the capillary portion of the vascular system—still remains a matter of doubt, and affords, therefore, room both for discussion and investigation. It is not with the idea of deciding this question that I have entered upon the present observations, but rather with the desire of adding a mite to the collection of recorded facts, upon which that degree of certainty attainable in medicine must be ultimately founded; and by relating some witnessed by myself, and collecting a few of a similar character observed by others, to make some deductions by which, though not sufficiently distinct and certain, numerous or extensive, to account for all the phenomena of the diseases produced by lead, we may, I think, arrive at conclusions nearly approximating to the truth.

Of the comparatively few cases of colica pictonum examined after death,

there appears a large majority in which scarcely any morbid appearances have been discovered in the intestinal canal. By some authors the colon is represented as firmly contracted; by others it is said to have been of smaller calibre than usual, but easily distendible by air or water gently propelled into it; and by others it is stated to have been found either natural, or actually distended. Some morbid anatomists, again, have reported the ganglia of the sympathetic to be enlarged and red; while others look for, and fancy they find, marks of irritation in the spinal marrow or its membranes

In the only case that I recollect myself to have seen, and which, though it may be thought by some to militate against some of my opinions, I am bound in justice to mention, there was a gangrenous condition of the mucous membrane of the colon, *apparently* connected with an extremely rigid contraction of the muscular coat; but whether as cause or effect may admit of doubt; and as nothing analogous is usually discovered, no argument can be fairly derived from it.

Such being the general and almost universal absence of marks of disease, pathologists have been led to consider this affection as one of the nerves, and thence of the muscular coat of the intestinal canal, and, in connexion with the symptoms during life—the protracted constipation, the small, round, hardened fæces, and the remittent pains—have generally, at least of late years, thought that the disease consisted in a paralytic condition of some part of the intestinal tube, and that the spasmodic pains (if spasm be really the source of the pains, which may, I think, admit of doubt,) were merely the consequence of such local paralysis. With this view accord the varying situation of the pain, affecting at one time the scrobiculus cordis, at others the loins, back, abdominal muscles, &c.; the different conditions of the abdomen itself—sometimes, perhaps generally, being flat or depressed towards the spine, but at others natural, or even distended, and the state of the circulation, it being often, if not generally, not only unexcited, but even slower than in health. But perhaps the greatest confirmation of this opinion is derived from the observation of the local effects of lead upon the external parts of the body, which, as the real object of this paper, after a few words on the general action of the mineral, I shall proceed more particularly to examine.

Lead, when administered in small quantities, has usually been regarded as a sedative and astringent. This view appears to derive support from, or rather was, perhaps, originally founded upon, its remarkable influence in allaying pain when externally applied, and its surprising effect in restraining hæmorrhage when administered internally, together with its peculiarity in producing palsy, and the state of the general circulation in persons suffering from its deleterious consequences. A recent writer considers that it cannot act as a sedative upon the nerves, because spasms are among its frequent injurious results, and appears to think it probable that it primarily influences the capillary system. In answer to this I think it only necessary to observe, that it frequently acts as a medicine upon the system at large, without the production of any thing *like* spasm; that, when the spasmodic pains do occur, they appear to arise from, or to be intimately connected with, its specific operation on particular parts; and that a local sedative is by no means inconsistent with spasm in other distant or contiguous portions of the body; that, indeed, if by its sedative influence it temporarily enervates, or destroys, the function of an organ, as it is supposed in colica pictonum, this effect is not only possible, but highly probable, as evinced by spasm and convulsions, from torpor of the bowels, in children, &c. &c. As to the part primarily affected by it, I may add, that, from the more recent experiments, particularly those of Dr. Addison and Mr. Morgan, it seems at least probable that all poisons, whatever may be their remote effect, act *through* the nerves to which they are applied; that, though the paralysis from lead is generally gradual in its approach, it not unfrequently comes on quite suddenly, which I conceive to be inconsistent with the supposed affection of the capillaries, but perfectly compatible with, and customary in, that of the nerves; and that the muscles of the persons and of the parts suffering from this palsy, are at least at the period of, or soon after, their attack, firm and large—much firmer and much larger than those of many individuals suffering from long-standing chronic disease, in whom all the motions of the limbs are perfect. On this account,

I believe that the wasting of the muscles in the limbs of persons who have long laboured under this species of palsy, is attributable simply, as in other cases, to want of use, and that it does not arise, as supposed by John Hunter, from the action of lead upon the muscular fibre. Indeed, it may be doubted whether lead is absorbed in general, as it appears, in some cases at least, to exert its influence upon parts of the body, under circumstances in which absorption is, to say the least, highly improbable. I am aware that it is stated by some one, I believe Gmelin, that the mineral has been detected in the fluids of the body, but under what circumstances, or by whom discovered, does not appear. On the other hand, numerous experiments have been *ineffectually* made by several authors and analysts to detect it in the blood, secretions, excretions, muscles, &c. The fact may be therefore considered as still in some degree doubtful. But is it quite certain that the pain in colica pictonum is of the character generally supposed? It is decidedly not usually of an inflammatory nature; but is it therefore, and because remittent, necessarily spasmodic? Tic douloureux and neuralgic affections generally prove the contrary. I have been led to doubt the correctness of the general opinion on this subject, for the following reasons:—

1st, The pain in this species of colic is sometimes not only confined to a particular part, as the umbilicus and the scrobiculus cordis, but is also of a continued character.

2d, When it in some degree remits (for it is, I believe, never truly intermittent, as in pure spasmodic colic), the paroxysms are of much longer duration than in those affections in which muscular contraction is the source of pain.

3d, The pains of the external parts, with which those of the abdomen alternate (though sometimes they *may* be), frequently are not of a spasmodic character.

4th, When purgative medicines begin to act in colica pictonum, the patient experiences griping pains, which, as stated by Dr. Warren, though I must confess the assertion has been only once verified by my own inquiry, are of quite a different character, and easily distinguishable by the sufferer, from those of the disease itself.

5th, When the hands, or other external parts, are primarily affected, though severe pains are felt in the back, shoulders, and upper arms, they are not mentioned as of a spasmodic origin, but are usually described as "pains of the joints," or rheumatism.

6th, The abdomen is in general either *uniformly* flat, and depressed towards the spine, in a natural state, or *uniformly* distended; and not, as in diseases of a truly spasmodic nature, at one part rigid and flat, or contracted, and at another uneven, nodulated, and inflated; we feel not at this part the firmly contracted muscle, and at that find it lax, or stretched with a flatulent knuckle of intestine.

I by no means think that spasm is never produced by the operation of lead; I do not even say that the pain of colica pictonum is not attributable to it, and to it alone; but I do consider that, for the reasons above stated, this supposed fact is open to considerable doubt. I will on this part of my subject only add, that by no medicine is peculiarity of constitution more clearly evinced than by this mineral. Thus, on the one hand, some men may, and do, work in lead for their whole life*, or for many years, without experiencing any injurious results; while, on the other, palsy of the face, as related by Dr. Cooke, and constipation and colicky pains, as recorded by Dr. Percival, have been produced by sleeping for a few nights in a recently painted room. I lately heard of a lady complaining of severe pains of the abdomen, with protracted constipation, for which her physician was unable to account, until, on a succeeding visit, it was mentioned that she had, for a few nights, slept in a room which had been fresh painted. From such and similar facts it may be doubted whether cleanliness and care, however they may *decrease* the frequency of its attacks, will ever be sufficient entirely to *prevent* the occurrence of colica pictonum.

I now proceed to the local effects of the mineral. That some substances act simply upon the nerves of the part to which they are applied, without any visible organic change, will, I conceive, be doubted by few, after a due consideration of the observations of Brodie, on the effects of monkshood when chewed;

* I have just seen a man who was a painter for forty years, without ever being affected with either colic or paralysis.

of Monroe and Philip, on those of opium when applied to the leg of a frog, or the intestine of a rabbit; of Dr. Addison and Mr. Morgan, on the ticunas, when similarly employed, &c. &c.

When my attention was first directed to the diseases produced by lead, I was induced from some circumstances to suppose, that local paralysis, whether of the bowel or of the limb, was always the *direct result* of the topical application of the poison to the nerves of the part with which it came in contact, and that the general, or constitutional symptoms, were merely the consequence of the decreased nervous energy of the affected portion of the body. Reflection and further observation, however, have caused me very considerably to modify this opinion; for seeing that colica pictonum has been the consequence of saturnine lotions, and other external applications, and that paralysis of the limbs occasionally results from drinking wines and cyder adulterated with the metal and its oxides, and that water holding in solution the same substances has sometimes produced similar effects, it is, I think, impossible to deny that lead, however administered, if in small and long-continued doses, has a decided and particular action on the muscular coat of the intestinal tube, as well as a marked tendency to produce a paralytic weakness in the voluntary muscles, to which those of the wrist and hand may perhaps be justly considered especially obnoxious. Notwithstanding this, I am still disposed to believe that paralysis, whether internal or external, is occasionally the effect of the local application of the poison upon *the nerves* of the part paralysed, and is really and truly a *local complaint*. Nor can I by any means assent to the opinion of a celebrated modern surgeon, that paralysis from this metal may be known by its existing *only in the upper extremities;* inasmuch as its influence, whether sedative or otherwise, is frequently experienced in other, and sometimes, indeed, in almost all parts of the muscular system; and I am inclined to think that the hands are affected so much more frequently than other parts, principally on account of their constant or frequent contact with the mineral.

I am aware that it may be urged, and very fairly urged, against this local influence, that the poison is applied to the fingers, hands, wrists, &c., and that the paralysed moving power is situated in the arm. But we constantly see, and feel, that though an impression is made upon the nerves of one part, the effect produced is exhibited in another; a fact that has been observed by, and familiar to, physiologists for years, or perhaps ages, though lately a *new name* has been assigned it, and the "reflex function" has been attributed to the medulla oblongata. How this is effected, it would not be consistent with the object of this paper to pretend to determine; suffice it to say, that the usual explanation, or that of continuity by nervous communication through the brain or spinal marrow (to which the celebrated experimentalist, whose paper is referred to above, adds the particular function of the medulla oblongata), appears at least probable; but however it may be explained, the fact is certain. In common palsy we also find that some parts retain their muscular power, but lose their sensibility, while with others the converse of this is observed,—facts which admit, I think, in the present state of our knowledge, no completely satisfactory or certain explanation.

Seeing, then, that lead appears to act solely upon the motor nerves, that those of sensation are seldom or never affected by it, and that it cannot come in immediate contact with the former, which are distributed to the muscles, and are, from observation, supposed to run through their whole course in filaments distinct from the latter, is it not natural to suppose—is it not consistent with observed facts—is it not analogical with other physiological and pathological phenomena, that the impression received by the extremities of the nerves of sensation should produce its effect upon those of voluntary motion, with which they are in immediate connexion? Nay, from the particular action, the known peculiarity of lead in this respect, is it not especially reasonable to believe that the influence received by the nerves of the part or parts to be moved should be felt in those of the moving powers? Such, whatever the explanation may be, I believe from observation to be the truth. To the two points mentioned above, viz. the occurrence of palsy in other parts of the muscular system, when coming in contact (through the nerves of sensation) with those alone, I shall at present confine my attention. First as to the constitutional effect:

Andenacus, as quoted by Sir George Baker, says, "Quod Paulus suo tempore, in morbo colico, commemorat, nos quoque nostra ætate frequenter vidimus,—nempè ex magno, diuturnoque, colico cruciatu, artuum resolutionem *præsertim* brachiorum, quamquam et *crurum imbecillitas* adfuerit." Citois, speaking of the wretched appearance of the sufferers from the malady he described, says, "Per vicos, veluti larvæ, aut, arte progredientes, statuæ, pallidi, squallidi, macilenti, conspiciuntur, manibus incurvis et suo pondere pendulis, ac *pedibus non suis, sed crurum musculis*, ad ridiculum, ni miserandum, compositis." Teller, referring to the effects produced by drinking wine adulterated with litharge, has these words: "Aliis miserrime patientibus, aut enervatis, elumbibus, redditis, pendulis artibus, et *resolutis incedentibus*." Van Swieten, referring to colica pictonum, writes thus: "In this disease, after most tormenting pains in the belly, in several repeated paroxysms, a palsy follows, sometimes of the upper extremities, *sometimes of the lower*." Dr. Heberden says, "The legs have been paralytic for a night, and I have remarked some, though not many cases, in which *they too*, as well as the arms, have been affected with *a lasting palsy*." Dr. Cook relates the case of a painter, of very dirty habits, who was suffering from paralysis of the *sphincter of the bladder, and the lower* as well as the upper extremities. There is upon record (but where, I cannot at present find) the case of a gentleman who was troubled with general palsy of the voluntary muscles, from drinking West India Madeira, of which he was very fond, and in all the bottles containing which were found shots. I also recollect reading a case in some periodical, where *general palsy of a temporary nature* followed the administration of lead for the cure of hydrophobia.

In addition to these testimonies, I may mention, that most of my professional friends whom I have asked, assure me that they have seen paralysis from lead affecting the lower extremities, as well, though certainly not so frequently, as the upper extremities; and that I have myself seen three * of a partial nature, one of which is at present under my care. That comparatively so few occur except in the hands, is, I think, fairly attributable to the widely extended acquaintance with the injurious effects of the mineral when taken internally for a considerable time, and to these parts alone coming in frequent contact with, and being therefore especially exposed to, its local sedative operation; to exemplify which I shall now proceed.

[To be concluded in our next.]

* Since writing this, a woman has been admitted into Guy's Hospital with hemiplegia from this cause.

LACERATION OF INTERNAL PARTS,

WITHOUT EXTERNAL LESION.

To the Editor of the Medical Gazette.

Sir,

The cases of laceration of the transverse portion of the colon, and of lacerated liver without lesion of the external parts, recorded in your Journal of last Saturday, by M. Rognetta, remind me of an extraordinary case of the sort which came under my care at St. Bartholomew's, when I was a dresser, some years ago, at that hospital. The following notes of the case I made at the time of its occurrence.

John Turner, about nine years of age, was brought to St. Bartholomew's on the 25th of August, 1825, a cart-wheel having passed over his body. From the time he was brought to the hospital (about 8 P.M.) till his death (between five and six hours afterwards) he breathed with extreme difficulty, seemingly by the diaphragm and abdominal muscles alone; he was restless, his pulse small and feeble, and his limbs, I thought, were colder than the ordinary temperature of one's body. Between twenty and thirty leeches were applied to his chest. About half-past ten, the neck and left side of the thorax became emphysematous; but on the right side there was scarcely any emphysema. I put on the rib bandage, which at first afforded relief, but the emphysema increasing, and the patient complaining that the bandage was painful, I removed it. About one o'clock the difficulty of breathing had become so great that every inspiration seemed likely to be the patient's last. An opening was now made into the left cavity of the thorax, in the situation where the emphysema was first observed, and where it existed to the

greatest extent. Immediately on the pleura (costalis) being divided, there followed a sound as of air rushing through the wound, and in about five minutes the patient died.

On examining the body after death, the left side of the thorax, which was supposed to have received the greatest injury, was found to have received the least: the lung of this side was considerably collapsed; in one or two points it was bruised, and its pleura seemed lacerated. On the right side there was one fractured rib (the second or third, fractured near its head); the lung was more collapsed than that of the left side, and there penetrated deep into its substance an extensive wound (about four inches in length, and above one in depth); its surfaces were in contact and adhering, probably only by coagulum. There was shed but a small quantity of blood (about six ounces) from this extensive laceration, which must have been enormous before the lung collapsed, inasmuch as the lung, in shrinking, must have caused a proportionate diminution in the length and depth of the wound. The integuments of the thorax were entire.

With regard to the rushing of air through the wound when the left cavity of the thorax was opened, it is doubtful whether air rushed into or rushed out of that cavity. The lung of that side was bruised, and seemed lacerated; if its surface was lacerated, air might have escaped into the cavity of the pleura; if air had escaped into that cavity, and if, at the time of its being opened, the patient had been in the act of expiration, then air must necessarily have been expelled from it; but if, on the contrary, the patient had been in the act of inspiration, then air must necessarily have rushed in. One cannot conclude that the latter happened, because the patient lived but about five minutes after the operation, as he was previously on the point of dying.

The extensive laceration of the right lung could not have been caused by the fractured ends of the rib, for the laceration was about the middle and in the outer side of the lung, whilst the broken ends of the bone were near the apex and at the back of the lung. It is probable that the whole of the bones and cartilages of the thorax yielded so far as to allow one of the ribs (and most likely that which was fractured, which, having only its cartilaginous attachment to the sternum, would yield the most) to be pressed with such force against the lung as to make, blunt as it is, the wound I have described.

I have the honour to be, sir,
Your obedient servant,
WM. BEAUMONT.

2, Manchester-Street,
Manchester Square, Feb. 14, 1835.

CASE OF RUPTURE OF THE VISCERA,

WITHOUT EXTERNAL APPEARANCES.

To the Editor of the Medical Gazette.

SIR,

THE following notes of a case of rupture of the viscera, without external appearances, may be interesting to some of your readers, in connexion with those recorded in your last number.

I am, sir,
Your obedient servant,
JOHN ELWIN,
Late House Surgeon, Middlesex Hospital.

48, Poland-Street, Feb. 9, 1835.

Rupture of the Liver, Spleen, Kidney.

Eliza Fox, æt. 7, brought to the Middlesex Hospital about 9 o'clock, P.M. Features collapsed, surface cold, insensible, stertor; pulse not to be felt; pupils act, though sluggishly. There are no bruises to be observed; two slight scratches upon the face. The friends state that the child was knocked down an hour ago, in the Hampstead Road, by a cab, the wheel of which ran over its body.

It lived twenty-four hours. Two hours after admission it recovered from the state of insensibility, and some sickness came on. The countenance was pallid, and expressive of great mischief *somewhere*. Hands and feet cold, but the body sometimes would get hot and perspiring. Great jactitation and uneasiness. The child swallowed fluids, answered questions, and complained of no pain.

Postmortem examination.—No bruise observed in any part of the body.

Brain.—No unnatural appearances, excepting some effusion of blood, incon-

siderable in quantity, underneath the dura mater, at the base of the skull.

Thorax healthy.

Abdomen.—On opening this cavity there was found a large quantity of blood effused; in fact the intestines were found lying bathed in blood. The spleen was completely divided into two halves, which were lying separated from each other.

The right lobe of the liver was traversed by a fissure, which appeared upon examination to have been closed by coagulable lymph. When the sides were torn asunder there was found a large cavity, as large as the fist, containing dark clotted blood, mixed with the substance of the liver broken down, as if crushed or bruised. The left kidney was traversed by a similar fissure, and also bruised.

The peritoneal coat of the small intestines in several places was divided, as with a knife.

CONGENITAL DEFICIENCY OF THE IRIS.

To the Editor of the Medical Gazette.

Sir,

Having read in your last number an account of the absence of the iris, in the person of M. M., I beg to offer for your disposal the facts of a similar *lusus naturæ*, which has fallen under my own observation, in the case of Sarah Hill, a child four years old.

I shall endeavour to arrange the particulars of this interesting case in such a manner that they may be contrasted with those of M. M., so far as the one case relates to the other; but as, from the child's tender age, it is unable to reply to interrogatories, I am unavoidably obliged to omit some points altogether, and to depend upon the testimony of the mother for others.

Sarah Hill has always been in good health, and is stated to be particularly lively and even-tempered. On the outer and lower side of each eye may be seen a trace of a grayish membrane. The degree of convexity of the corneas appears natural, and of the ordinary size. Both eyes are in a constant state of vacillation, which the child is quite unable to control, and which is greatly increased by any sudden excitement. The singular appearance of the eyes attracting the mother's notice, she took the child, as soon as she was able after her confinement, to an eminent oculist, who gave it as his opinion that the child would never see. After the lapse of a few weeks, she was induced to apply to another of our first practitioners in that branch of surgery, who also expressed a similar opinion, but desired the mother to notice whether or not the child's eyes followed a candle carried about the room, as, if they did, he should consider the sight would improve. She tried this experiment, and found that the infant certainly noticed the lighted candle; and further, that it did not distress it when brought close to its eyes. While nursing it she frequently observed that *the child would keep its eyes fixed on the sun for several minutes together, without shewing any uneasiness.* This statement was also confirmed by the father.

When the child began to play about, it would frequently pick up pins in the street, and never exhibited any imperfection in its sight. Unlike the case of M. M., this child cannot see in an obscured light. The eyes appear to be strong and healthy, and have never been known to water more than naturally. This latter circumstance would lead me to consider, either that in the case of M. M. there is a considerable increase of irritability in the retina, or that, in Sarah Hill, the natural degree of excitability is as much diminished.

The shape of the child's head is rather unusual. The hair grows very low on the forehead, the upper surface of the head being flat, and its antero-posterior admeasurement being rather great. The parietal eminence of the left side is somewhat larger than that of the right. One of S. Hill's brothers fell a victim to hydrocephalus, and there appears a predisposition to this affection in the other branches of the family. May not the mobility of the eyes depend upon some internal disease?—I am, sir,

Your obedient servant,

F. W. Willisford.

Sloane-Street, Feb. 10, 1835.

SODA IN TOOTH-ACHE, AND SOME FORMS OF NEURALGIA.

To the Editor of the Medical Gazette.

Sir,

Having seen in a recent number of the Medical Gazette some brief observations on the use of soda as a remedy in tooth-ache, I beg permission to add my testimony to the correctness of this fact.

In many cases of severe tooth-ache, the attack seems to depend upon a deranged state of the stomach, accompanied with copious formation of acid; and if this state be allowed to go on, the pain will not be confined to a single tooth, but extend to the whole side of the face, darting along the course of the pes anserinus, and having all the characters of tic douloureux.

I need scarcely observe, that no organ exerts such a powerful influence upon the whole system as the stomach. By its derangement a variety of sympathetic affections, almost infinite, are produced; and to this cause there can be little doubt that the different forms of neuralgia, among other complaints, frequently have their origin.

It is now four years ago, when suffering under an intense attack of tic douloureux, in which opium had been used internally and locally without the smallest relief, that my friend, Mr. H. Worship (now of Yarmouth, in Norfolk), suggested I should take a little sodæ carb. in water. The effect was almost immediate; carbonic acid was eructated, and the pain quickly abated. For nearly two years after I continued liable to slight attacks, whenever by incautious eating or drinking I deranged the stomach; but matters were invariably set right by the use of the alkali.

Since this I have treated several cases of a similar sort upon the same principle, and with success. In all these there were evidently symptoms of gastric derangement, and when this was removed, the neuralgia disappeared also. In one case, which was very severe, the soda did not appear sufficient to restore the stomach to its healthy condition; and here a mild course of alteratives and tonics, in addition to the alkali, gave complete relief.

I think that if the subject be further investigated, it will be found that in some cases merely filling the decayed tooth with sodæ carb. will not succeed: indeed, in many cases it would be impossible, for, where the attack has been severest, the pain has been so diffused over the side of the face, that the patient has been unable to decide which tooth it was that ached. The varieties of tooth-ache have been but little attended to; and I am sure their investigation would lead to useful as well as curious results.

In offering these observations, I beg to assure you that I do so without the smallest wish to invalidate the originality of Mr. Gaskoin's remarks, to whom I am a perfect stranger; I do it simply to confirm a useful practical fact, which is well worthy the attention of the profession.—I am, sir,

Your obedient servant,
Edward Rigby, M.D.

44, Parliament-Street,
Feb. 17, 1835.

FRACTURED SKULL—RUPTURE OF THE SPINOUS ARTERY—TREPHINE;

AND SUCCESSFUL TERMINATION.

To the Editor of the Medical Gazette.

Sir,

If you think the following detached case of sufficient interest for insertion in your journal, you will oblige me by introducing it. Individual cases of surgery do not present the same sort of interest to readers generally, unless attended with peculiar circumstances, as is attached to a well-arranged series of analogous cases. But when they involve the consideration of any principle in surgery, and tend to establish the propriety of any method of treatment, I conceive that they cannot be wholly unacceptable to a medical public.

The cases of injury to the head, in which the operation of trephine is applied, are comparatively rare in the present day. Two causes, of a totally opposite character, may be assigned for this:—1st, the lesion, in many instances, is of a character not of sufficient intensity to demand the operation, or the cases are of so severe a description that the operation cannot be performed even with the slightest prospect of success;

and hence some surgeons have fallen into the error of laying aside the operation altogether, and of treating cases upon what are called *common principles*—a practice directly opposite to that of the older surgeons, who are known to have resorted to the operation upon the most trifling occasions.

The following is that precise description of case in which this important operation can be employed with the best possible prospect of success; and it illustrates two points of great practical importance: 1st, it proves the advantage gained by the speedy removal of the compressing agent; 2dly, it shews the necessity of an extensive removal of bone, to give exit to the effused fluid.

October 22d.—Robert Dixon, æt. 20, was brought into the London Hospital, at 2 A.M., having received, in a drunken quarrel, a blow upon the head from a hand-spike. He was stunned by the blow, and taken up in a state of insensibility, in which condition he was admitted. The following was his state:—He lay upon his right side insensible; his pulse about 70 in the minute; skin warm; the pupils of his eyes, upon the application of the light of a candle, contracted freely for a short time, and then returned to their former state of partial dilatation,—that of the left side was rather more dilated than the right; great ecchymosis about the left eye. The examination of the scalp shewed a wound, of two or three inches, below the left parietal eminence; and a fracture of the parietal bone was readily perceived taking a semicircular course from behind forwards, as far as the frontal bone, but its termination I did not see. As the symptoms indicated compression of the brain, and as one portion of bone was driven beneath the other, and as the fracture, from its position, must of necessity have traversed the groove for lodging the spinous artery, I thought it advisable to remove a portion of bone with the trephine; I therefore performed the operation, including the edge of the fracture just within the crown of the instrument. A quantity of dark coagulum was found upon the dura mater. The extravasation appearing extensive, I removed in a similar manner a second portion with the trephine, and with Hey's saw three angular pieces were detached. The removed portions clearly exhibited the track of the spinous artery. Considerable hæmorrhage took place from amidst the coagulum; and as the patient's pulse indicated great debility, a small dossil of lint was laid upon the part whence the hæmorrhage proceeded. The wound was dressed, and the man was ordered calomel, ℈j. to be taken early in the morning. Immediately after the operation the pulse increased in frequency, but was weaker, and the irides became more sensible to light.

23d.—Has passed a quiet night; became more sensible soon after the operation, and this morning he answers when spoken to; but his power of articulation being very imperfect, he makes a sign upon his pillow in answer to a question as to his age: complains of pain on the left side of the head; has vomited two or three times this morning; pulse calm, but weak; bowels relieved in the night; as he was unable to pass his water, it was drawn off by the catheter; the hæmorrhage continued for some time during the night, but has ceased.

Cold Lotion to the head, and Calomel, gr. ii. every four hours.

24th, 7 A.M.—Has passed a good night; still complains of pain on the left side of the head; pulse calm, and soft; bowels not relieved since.

20 Leeches to be applied to the head; a Cathartic Clyster immediately.

Passes his water himself.

25th, 7 A.M.—Is better this morning, and has passed a good night; answers more freely and distinctly, but still has difficulty in pronouncing; skin moist; pulse 80, and soft; bowels opened twice; complains still of his head, but it is less painful.

Continue the Calomel; 20 Leeches to the head.

26th.—In every respect better. The head has been dressed daily since the operation, and presents nothing peculiar in its aspect.

Continue Medicine.

27th.—Still improved in every respect; his mouth rather sore: the calomel is therefore to be taken only night and morning.

28th.—Has been disturbed the whole night by another patient, and is therefore not so well; complains of pain at the top of his head, and the wound, which previously had presented a

healthy aspect, now looks flabby and dry; pulse still calm; skin hot; bowels opened four times this morning.

Ordered 12 Leeches to his head, and to take the Calomel only at night.

Nov. 3d.—Has continued to improve since, but is as yet unable to articulate distinctly. Leaves off his medicine.

5th.—Has had slight pain in his head; bowels rather confined; wound looks healthy, and is granulating well, the granulations rising from the surface of the dura mater.

27th.—No alteration but that indicating gradual improvement has taken place up to this period; he has to-day, however, a slight attack of jaundice.

Ordered Infus. Gentian, c. Magnes. Sulph. ter in die.

The jaundice soon subsided under this method of treament, and the man has continued gradually to mend; the surface of the wound granulating, and the process of cicatrization proceeding in the most satisfactory manner. Two portions of bone have exfoliated, and have been removed; and the wound is now nearly healed. His articulation is natural.

I have omitted the mention of the diet of the patient, which at first consisted of the lighest possible description of food, for which, after a certain period, a more nutritious one was substituted, and he now takes the ordinary diet of the hospital.

There is one point of some importance in this case to which I wish to allude;—it is this, the continued hæmorrhage from the spinous artery after the removal of the bone. I am by no means certain that the method pursued in this case, and which is generally recommended, is that which ought to be implicitly followed. Indeed, the surgeon will frequently find himself foiled in his attempt to arrest the hæmorrhage by the application of a dossil of lint; and I am well convinced that in a variety of cases this may be considered as rather a fortunate occurrence.

I have formed this opinion from the only two successful cases of the operation which I have witnessed;—I allude now to a case which occurred to the late Mr. Headington, and the one now under consideration; in both of which the bleeding continued after the operation, and in the former instance almost to the complete exhaustion of the patient.

I am, sir,
Your obedient servant,
JOHN ADAMS.

31, New Broad-Street,
Feb. 10, 1835.

MORALE OF MIXED PATIENTS IN HOSPITALS.

To the Editor of the Medical Gazette.

SIR,

I AM happy to find that M. Ferrus, in his "Rapport" upon the hospital system in this country, has laid so much stress upon the indiscriminate mixture of patients in our hospitals.

"Patients of different ages being found in the same wards,—this he conceives to be injurious to the *morale* of the inmates *." It seems somewhat strange that we, who pride ourselves upon our morality, should be set right on such a point by a foreigner. Now, sir, having heard the opinions of patients themselves upon this matter, there remains no doubt upon my mind, and there can be none in the minds of those who have thought upon the matter, that the system is decidedly wrong.

Young boys, just ripe for all kinds of mischief, but as yet unlearned in the more glaring vices of manhood, are admitted into a ward with adults in whom vices of the worst description are habitual. The poor children return to their parents, but, alas! the morality and the piety which was early instilled have given way to obscenity, to swearing, and other crimes equally detrimental; and so another member is sent forth to the community polluted and depraved, who, but for the example in the hospital, might have continued upright.

From such a system how can we expect morality; and how can we expect that sickness should be productive of those benefits which a wise Providence intended?

I hope earnestly that the subject will shortly be taken up by the governors of our hospitals, to whom there is entrusted a great responsibility.

I am, sir,
Your obedient servant,
PRO BONO PUBLICO.

February 8, 1835.

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* Med. Gaz. p. 633, *ante*.

ON INFANT MORTALITY IN MANCHESTER,

AND SOME OTHER PARTS OF LANCASHIRE.

To the Editor of the Medical Gazette.

Sir,

I had read with very great interest Mr. Rickman's letters on infantile mortality, also your own valuable articles on the same topic, without the slightest thought of mingling in the discussion, until I noticed a remark in Mr. Rickman's last letter, in the No. of the Medical Gazette for February 7th, which induced me to think that I had it in my power to supply a few facts concerning the infantile mortality in Manchester, new perhaps to Mr. Rickman, who does not appear to be in possession of data in reference to this point. In the passage I allude to, that gentleman, after stating the mortality of infants at Leeds, Nottingham, Liverpool, and at several other large towns, proceeds thus:—"It is supposed that Manchester would exhibit a large proportion of infant mortality, but this cannot be ascertained, because more than half the number of burials take place where the ages of the dead are not recorded, and all the other burials would produce a fallacious result, because they consist of the more opulent classes of the community." Here I cannot help remarking that Mr. Rickman must be under a mistake when he supposes that half the burials in Manchester take place where the ages of the dead are not recorded. All the registers belonging to the burial grounds of this establishment since 1812, contain the ages of the dead, according to Rose's act; and the ages are noted in the register of the cemetery for all denominations in Rusholme Road, now the most extensive burial ground in this quarter. If there be places here whose registers do not contain the ages of the buried, they are unknown to me, and I have for years paid some attention to this matter.

The following statement of the infant mortality of Manchester, at different ages under the tenth year, is free from the objection Mr. Rickman supposes would necessarily attach to such a statement—viz. that of representing the mortality in the opulent classes only. In 1826, I examined the list of interments at the Collegiate Church for eight years, from 1816 to 1823 inclusive; and also the lists of Rusholme Road cemetery for four years — from April 1821 to the same month in 1825. In the registers of neither place are the still-born entered. My researches were confined to these two burial grounds, believing that the results might be taken as a tolerably fair exhibition of the rate of mortality for the town at large; the poorest class burying at the collegiate church, and a class, all somewhat above the very lowest, at the general cemetery.

	Total Deaths in the Registers, at all Ages.	Under 2 Years of Age.	Between 2 & 5.	Between 5 & 10.	Total under 10.
Collegiate Church ..	8656	40·40	14·78	4·47	59·65
Rusholme Cemetery	3559	40·06	12·43	3·82	56·31

It would appear that the infant mortality is greatest at the collegiate church. But this may depend, in some measure, on the table for the former place being made from an average of more years than that for the latter. In the first period—viz. under 2 years—there is little difference between the two in the amount; but in the second period, from the second to the fifth year, when the constitution is most strongly predisposed to the epidemic and contagious diseases of infancy, the difference is much greater—nearly 2½ per cent.; and shews that in these circumstances the children of the poorest class, as might be anticipated, are exposed to the greater risk of death.

Certainly these data corroborate Mr. Rickman's supposition, that "Manchester will exhibit a large proportion of infant mortality," since it appears, from the above facts, that more than 40 per cent. of the deaths at all ages occurs in the first two years of life; a per centage larger than in any other town, even than in Glasgow, and which is chiefly attributed to the high (in this respect unparalleled) proportion that the poor bear to the wealthy classes in the composition

of our population; as also to the enormous immigration of the Irish. But as this is a topic I have elsewhere enlarged on, I forbear extending my remarks*.

Eccles, near Manchester. This is a parish of considerable extent, in which there are many populous villages. In the year 1821 it contained 4233 families, of which 3629 were employed in trade, manufactures, or handicraft. The following table gives the results, in reference to infantile mortality, for seven years—from 1818 to 1825 inclusive, excepting for 1823, which was accidentally omitted:—

Total Deaths in the Registers, at all Ages.	Under 2.	Between 2 & 5.	Between 5 & 10.	Total under 10.
3378	35·46	10·92	2·96	49·34

Lymm, a country parish, about 15 miles from Manchester, situated on the Duke of Bridgewater's canal, and containing a rather populous village. Most of the inhabitants, however, are employed in husbandry, and their amount, in 1821, was 2090. The following table is for nine years—from 1817 to 1825 inclusive.

Total Deaths in the Registers, at all Ages.	Under 2.	Between 2 & 5.	Between 5 & 10.	Total under 10.
333	31·52	4·80	3·90	40·22

Grappenhall, three miles south of Warrington. The number of families it contains I did not ascertain. The burials at the parish church are chiefly out of the agricultural portion. From the parish register for eleven years (from 1815 to 1825 inclusive) I formed the following table:—

Total Deaths in the Registers, at all Ages.	Under 2.	Between 2 & 5.	Between 5 & 10.	Total under 10.
397	25·43	7·30	2·26	34·99

Winwick, situated three miles north of Warrington. Of the 3027 families which this parish contains, 2458 are employed in trade, manufactures, or handicraft. The annexed table is founded on extracts, for nine years, from the register kept at Winwick church. It is, however, to be observed, that only a small portion of the inhabitants, and that the most *rural*, bury at the parish church.

Total Deaths in the Registers, at all Ages	Under 2.	Between 2 & 5.	Between 5 & 10.	Total under 10.
1486	23·94	6·12	4·66	34·72

There are many considerations to be borne in mind, in estimating with due accuracy, from mortuary registers, the amount of infant mortality in any given population. These I shall not enter upon, but merely call the reader's attention to the following obvious and simple conclusions:—

1st. From the above calculations it will be seen, that while, in a vast and populous town like Manchester (com-

* Observations on the Mortality, &c. of Children, 1827; and Observations on the Health of English Manufacturers. Ridgway.

posed chiefly of operatives), of every 100 deaths, above 40 occur at ages under the twenty-fourth month of life; in a village population, chiefly operative, as that of Eccles, the mortality of the same period falls to about 35 per cent.; in a still more rural condition of life, as at Lymm and Grappenhall, it farther falls to nearly 28; and in Winwick, in that portion which is strictly rural, the per centage of deaths under the twenty-fourth month is reduced to rather less than 24 per cent.

2dly. In the second period (*i. e.* from the beginning of the third to the end of the fifth year), the infant mortality becomes more nearly equalized in the different places. In Manchester it is about 13½ per cent.; in Eccles, nearly 11 per cent.; in Lymm and Grappenhall, taken together, about 6 per cent.; and in Winwick also 6 per cent.

3dly. In the next period (*i. e.* from the fifth to the tenth year of life), the equalization of the mortality becomes remarkable. We now find the per centage of deaths, in this period, actually greater in the rural district of Winwick than in Manchester;—a circumstance easily accounted for, when we reflect, that, in such a town as Manchester, all the more feeble and sickly children are carried off in the first few years of existence, and only the more vigorous (speaking generally) attain their seventh or eighth year. Hence, as I have elsewhere remarked *, children in this great manufacturing community, who live to an age when they can be legally admitted into cotton factories, *possess, for the most part, sound constitutions.* So much for Villermé's opinion regarding the dreadful mortality produced by English manufactures! The evils, physical and moral, attendant on occupations of this nature, are many and formidable; but *a high rate* of mortality in that portion of the population which attain their eighth or tenth year, is not one of those evils.—I am, sir,

Yours respectfully,

JOHN ROBERTON.

Manchester, Feb. 12, 1835.

* Dr. Bisset Hawkins' Appendix to the Report of Factory Commission, p. 234.

FECUNDITY OF MARRIAGES.

To the Editor of the Medical Gazette.

SIR,

AFTER insertion of my letter in your journal of the 31st January, I perceived in your next, of the 7th February, a statement by Mr. Rickman, from which 4·16 is concluded to be the general average of births to each marriage in England and Wales; and I conceive it indispensable for me to shew that so elevated an average is inadmissible.

Taking for granted that the elements of computation adduced by your correspondent are correct, it is in the first place observable, that not less than *five* hypothetical admissions, the accuracy of each very questionable, have been called in aid towards the conclusions at which he arrives; and this alone ought to caution every one interested in the question against hastily conceding an assent. The fact really is, that there exists not in this country any collection whatsoever of data capable of settling that question, with a tolerable degree of approximation to the truth. Such being the case, however lamentable, there remains no alternative from seeking authentic, complete, and conclusive data, wherever else they may be found. Now we actually do find, in the public records of France, every thing desirable in that respect; and no reflecting and unprejudiced person will stop at the supposition, that, between two neighbouring countries, where all the circumstances bearing upon the question so nearly assimilate, the operations of nature are likely to be sensibly different.

The 23d chapter of my publication "On the Laws of Population and Mortality" has established, I believe upon incontrovertible grounds, that the general average of births to each marriage, in France, does not exceed *three and two-thirds;* and taking into consideration that, in 18 out of 1000 marriages, the female is aged 53 years or more, the inference is, that 3·75 births may be assignable, as a *maximum*, to each marriage within that age, taken as the limit of child-bearing capability. Resting upon this fully ascertained result of investigation, unaided by any hypotheses whatsoever; and having further taken the trouble to note, with the

greatest care, the individual age of each female party to 121,525 marriages, embracing the whole of those at Paris during the 18 years 1813-1830, I obtained the series which you transcribed in your journal of the 31st January, of the comparative quantities of marriages occurring at each year of age. From these, again, as also by an elaborate method set forth in the 24th chapter of my book, has been concluded, without possibility of erring in any palpable degree, the second series, also there transcribed, of the quantities of births assignable on an average to each marriage, at every year respectively of the wife's age; which last statement, be it always understood, is especially referable to the above admission of 3·75 births to each marriage indiscriminately, but within the limit of 53 years. If, then, the general average of 4·16 found by Mr. Rickman were admissible, it would be necessary, in order to render comparable those diverging quantities, to add to the latter the proportion of about 2 per cent., because of the marriages at ages exceeding the limit of child-bearing, and then we should have 4·25 births to compare with 3·75 only; the discrepancy to be accounted for being as 15 to 17, say no less than $11\frac{1}{3}$ per cent.

It will further be observed, on investigating my last-mentioned series, that the general average 3·75 corresponds with the specific average of births ascribable to marriages at 27 years of the female's age precisely; whilst the average 4·25 would correspond with the specific average of births to marriages at 23 completed years only, or rather $23\frac{1}{2}$, to speak with comparative precision; whence, if by any possibility Mr. Rickman's conclusions were justified, it could be only from assuming that the marriages in England were generally contracted by females *three and a half* years earlier than they are in France.

Limiting myself to the foregoing remarks, I leave the point of discussion for the present as it stands. The grounds of my conclusions are open for investigation; and if I may have lapsed into any error, no man is more competent to detect it than Mr. Rickman himself; nor do I know of one from whom I should should sooner expect the candid acknowledgment of any mistake in his previous statements.

Let me be permitted, in conclusion, to suggest the probable origin of such mistake:—

Mr. Rickman takes his ground from successive quantities of marriages, and from successive quantities of corresponding births, each of them *averaging so many* ANNUALLY; but if it be taken into consideration that the constantly increasing progressions from year to year, both as to the marriages and to the births during each of those years, do not follow in the same ratio, and that such increase has been more rapid as to the marriages than as to the births, it will immediately be seen, that to conclude any general *annual* average at the expiration of a certain period of years must lead to false results; inasmuch as the anterior marriages will—so long as the population continues in that progressive state which induces a greater number of, and earlier marriages, consequent on a redundancy of *youthful* population in the distribution of the whole—contribute each year decreasing proportions of its manifested births; and therefore no *annual average* at any time admitted, of the marriages and births respectively, can be viewed as strictly comparable quantities.

I believe it, however, very true, generally speaking, that marriages in England are rather more productive than those in France; and I incline to ascribe any difference in that respect, though only very small, to the single cause of earlier marriages in the former; yet I cannot be reconciled to admit that the difference of age actually extends to *three years and a half.*—I am, sir,

Your obedient servant,

FRANCIS CORBAUX.

Lambeth, Feb. 13, 1835.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

An Inquiry into the Nature and Causes of Lateral Deformity of the Spine; in reference, more especially, to the pernicious effects of certain moral and physical influences, resulting from the modern system of Female Education: with practical Hints for the Prevention and Cure of this Affection. By EDWARD W. DUFFIN, M.D. &c. &c. Second Edition.

WHEN the first edition of this work was published, we made some objections to

certain views which it contained, and which appeared to us to be erroneous. We perceive that the parts to which we alluded have been modified, and the whole improved by the addition of new matter and numerous judicious suggestions. There is probably no circumstance connected with health which can with so much advantage be brought under the notice of unprofessional persons as the due regulation of physical education; and Mr. Duffin's "Inquiry" contains some very useful practical hints on this subject, particularly on postures and exercise, the effects of which are farther illustrated by some well-executed drawings on stone. We can recommend the volume, as giving a clear and satisfactory outline of the nature and causes of lateral curvatures of the spine, as well as of the best modes of treatment. The evil arises chiefly from the artificial constraints imposed upon girls by the present system of boarding-school education; and its prevention must mainly depend upon opening the eyes of the public to this truth. To impress this fact the more strongly on our readers, we subjoin a *carte* of the manner in which the day is spent at a young ladies' seminary, copied from an article by Dr. Forbes, inserted in the Cyclopædia of Practical Medicine:—

"'At 6 in the morning the girls are called, and rise.

From 6 to 8, learning or saying lessons *in school.*

„ 8 to 8½, at breakfast.

„ 8½ to 9, preparing lessons *out of school* (some of the girls permitted to do so in the garden.)

„ 9 to 1, at various tasks, in school.

„ 1 to 1½, out of school, but must not go out of doors; reading or working, and preparing for dinner.

„ 1½ to 2, at dinner.

„ 2 to 5, in school, at various tasks.

„ 5 to 5½, at tea.

„ 5½ to 6, preparing to go out; dressing or reading, or *playing in school.*

„ 6 to 7, walking, generally arm in arm, many with books in their hands.

"Two days in the week they do not walk in the evening at all, being kept in for *dancing;* but by way of amends, they go out on two other days, from 12 to 1, and then they miss *writing.* It is to be remarked, that *they never go out unless the weather is quite fine at the particular hours allotted for walking.* They go to church all the year round, twice every Sunday, on which day no *other exercise* is taken.'"

A List of Two Thousand Microscopic Objects; with remarks on the Circulation in Animals and Plants; the Method of Viewing Crystals by Polarized Light; &c. &c. &c. Forming a Guide for Selecting and Labelling Subjects of Natural History, Botany, and Mineralogy, for the Microscope. By Andrew Pritchard, Author of the "Natural History of Animalcules," &c. &c. &c.

Mr. Pritchard has increased much the obligations that microscopists are under to him, by the publication of this little work. Besides the list, which is copious as well as curious, it contains a variety of valuable hints, which must be appreciated by all who are fond of microscopic investigation. The remarks on viewing objects by polarized light are both new and interesting. The price of the whole is only a shilling!

MEDICAL GAZETTE.

Saturday, February 21, 1835.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

Cicero.

THE LATE BARON DUPUYTREN.

The death of this great man is an event which France will not be permitted to mourn alone: the sympathy of all Europe attends her. The fame of her Dupuytren—the precepts and the example of her "first of surgeons"—have spread far and wide; and professional men in every quarter of the globe will deplore the loss of one to whom they have long looked up with feelings of pride and admiration.

Guillaume Dupuytren was born at Pierre Buffière, a small central town of France, on the 5th of October, 1778*. Of his family and early life we believe there is not much to be said: both were

* According to M. Orfila, 3d Oct. 1777.

probably humble: his education, however, was not neglected. He pursued his first studies at the provincial college of La Marche; but whether he discovered, at this early period, any partiality for medical science, we have not been able to learn. It is difficult to suppose that a genius so decidedly medical as his should have been merely acquired. If it be true that the poet and the painter must be *born* to their art, we can hardly be persuaded that such an artist as Dupuytren could be simply *made*. It is said, however, that he owed altogether to chance the opportunity of being connected with that profession of which he afterwards became so distinguished an ornament. The story goes, that as he was one day amusing himself in the streets of his native town—probably he was not more than 12 or 13 years of age at the time—an officer in a marching regiment took a fancy to him, and afforded him the means of visiting the metropolis. It is certain, that so early as his 17th year (in 1795), he was appointed demonstrator *(prosecteur)* in the Ecole de Santé of Paris. He won the office by concours.

His next public trial of skill was, after he had obtained the Doctorate in Surgery, in a contest with Dumeril for the place of *Chef des Travaux Anatomiques*: he lost the appointment by one vote. But in the following year he was more successful, his competitor having been named Professor of Anatomy to the school.

It was now that Dupuytren began to apply himself assiduously to the study of pathological anatomy; and he had the advantage of having Bayle for an assistant. Bichat was at this time running his brilliant career, and Dupuytren enjoyed the friendship of that illustrious person.

In 1802 he was chosen by concours to the second surgeoncy in the Hôtel Dieu; thirteen years after he attained the post of surgeon in chief.

But perhaps the proudest triumph which his great abilities procured for him was in the year 1812, when, after one of the most splendid displays which the concours ever presented, he was appointed Professor to the Faculty, as the successor of Sabatier.

Such briefly are the leading facts relative to the rise and progress of M. Dupuytren: little more of his personal history remains to be told. His attention to the duties of his high and arduous office at the Hôtel Dieu was most exemplary: a large portion of the early part of each day was spent there; and under his guidance and auspices the surgical clinic of that hospital became the first in France—perhaps equal to any in the world.

His private practice was very great; but we believe it was not through that alone that he was enabled to amass his prodigious fortune. He is said to have left property to the amount of about seven millions of francs (280,000*l.*) to his daughter, Mde. de Beaumont; besides 200,000 fr. (8000*l.*) to found a new professorship in the school.

Our readers are acquainted with the history of the last year of M. Dupuytren's life: we have only to close it by stating that he died, in much suffering, but with great resignation, on the morning of the 8th instant, in the 56th year of his age.

The obsequies were performed on the 10th, in great state. A grand funeral service was celebrated over the body in the church of St. Eustache; after which the *cortège* proceeded to Père la Chaise, the students drawing the hearse all the way. The professors and members of the school, the deputations of the Academies of Medicine and the Sciences, and a guard of honour composed of troops of the line, followed the remains in a lengthened and numerous procession. MM. Rothschild and Lemercier, besides several general officers and peers of France, were also in attendance.

Over the coffin were spread the professor's robe and the insignia of the Legion of Honour.

Orations were pronounced at the grave by MM. Orfila and Bouillaud, in the name of the school; by M. Pariset, on behalf of the Academy of Medicine; by M. Larrey, for the Academy of Sciences; and by MM. Royer-Collard and Tessier, for the students of the Hôtel Dieu. From M. Bouillaud's tribute, which seems to have been most admired, we extract a few passages relating to the last illness of the deceased.

"After much lingering and cruel illness, M. Dupuytren saw that his case was without hope. The resignation which he then displayed has been rarely witnessed: his courage was worthy of a stoic. To the last moment he possessed all his usual presence of mind — his clearness and sound judgment. Not a word of murmuring or weakness escaped his lips. For eight days he thus endured agony, and all that time it was only miraculous that he could continue to exist. It seemed as if death hesitated to strike so noble a victim, or to destroy an organization that nature had so splendidly framed!

"The last thoughts of M. Dupuytren were engaged about the Faculty—that Faculty which was so dear to him, and of which he was one of the greatest glories; to which also he has left so brilliant a proof of his attachment by the legacy he has bequeathed.

"Thus, gentlemen, we find that the intellectual powers of this illustrious man survived his physical nature; and that though thrice scathed by the bolt of apoplexy, his firm and great brain has been the *ultimum moriens*—the last of him to die!"

In person, M. Dupuytren was somewhat above the middle size, stout, and well-formed; his features were regular, and he had a placid, dignified look. His manner was very imposing: there was altogether a majestic air of superiority about him, which bade defiance to rivalry; and certainly, if the profession in France was a monarchy, his was the hand to wield the sceptre. Rivals he had none—at least in France; and even the most eminent of his *confrères* did not approach him without respect. "Which of you," said M. Bouillaud, in the fervent oration just quoted, "which of you, gentlemen, on seeing M. Dupuytren for the first time, did not feel an internal thrill on coming before the majesty of his person—a kind of secret dread, such as the poets describe as affecting those who stood in the presence of the gods? It was because there was something divine in the glorious professor whom we have lost!"

We can make allowance for the enthusiasm with which this was uttered; but the fact, we believe, is not exaggerated. The pupils ever looked up to him with awe and veneration; and all parties agreed in allowing his transcendant merits. He was, in short, to use the language of some of his admirers, the "Napoleon of French surgery:"—fully as ambitious, too, it might be added, as his prototype, and unwilling to brook a rival near the throne.

There was, however, one little failing which he possessed, in common with the gods and heroes with whom he has been compared: he would sometimes condescend to forget his attributes of meekness, and kindle into fiery rage. We have heard of instances when, on no great provocation, the temper of M. Dupuytren has been ruffled even to ferocity; nor has he abstained, it is said, from acts of absurd violence on these occasions. This was, perhaps, the greatest blemish in his character.

In his private practice, M. Dupuytren was eminently successful. His patients were numerous, and he always took care that they paid him regularly his fee; at least, when they visited him at his own house, he generally contrived that they should not go away in his debt. His mode of managing this delicate matter was ingenious. It is the habit of some people who are clever, but unluckily have short memories, only to recollect the fee on their first visit to their physician;

taking leave on the second without any allusion to the vulgar subject of money. This puzzled M. Dupuytren a little at first, but he soon succeeded in finding a remedy. He had a faithful servant (whom, by the way, he has liberally remembered in his will) who guarded the pass below, and who received a well-known signal when the fee was not paid. On bowing his patient out, M. Dupuytren rung one of two bells; if the fee was paid, the coast was clear; if not, the "no pay" bell was rung, and the visitor, on reaching the hall, was accosted with "*mille pardons!*" and a hint that he had *forgotten* to pay M. le Baron his fee: of course the politeness of the appeal was irresistible. Such is the anecdote that has been related to us, on authority which we believe to be good.

There was another particular which conduced to render M. Dupuytren richer than he probably would have been had he resided in this country. He lived in quite a different way from what persons of his professional rank do here. Whether he was in the habit of giving *entertainments* we know not; but certain it is, that he kept up nothing like an establishment; his residence in the Place St. Germain l'Auxerrois was merely *part* of a house—an *appartement*—a floor, or what our northern friends call a *flat*. The fact of there having been a ball (!) given on the floor above him a night or two before he died—and which it is said, greatly disturbed his dying moments—speaks volumes as to the difference of the style of living between French and English first-rate practitioners.

But with all this, it is doubtful whether the practice of M. Dupuytren, extensive as it was, and thriftily managed, could have enabled him to amass the great wealth he died possessed of. The popular rumour ran that he was fond of play, and that fortune always smiled upon him; but we believe the more trustworthy account of the matter is, that he had a friend in M. Rothschild, who was more to be depended on than the fickle goddess. The banker looked after his affairs, and turned his money for him with success.

It only remains to treat briefly of M. Dupuytren as a teacher, as an operative surgeon, and as an author; in either of which capacities it were superfluous to describe his great excellence at any length. As a clinical instructor he was unrivalled. His art of detecting and distinguishing disease was admirable: on reaching the patient's bed-side, he seemed to take in at a glance all the circumstances, even the most minute, connected with the case; his questions shewed this; the lecture delivered afterwards proved it. And how splendid was that lecture in both matter and manner! His elocution was at once chaste, calm, fluent, and full of impressiveness. The method and connectedness of his discourse never failed to rivet the attention of his auditory; and we would have defied even the most critical to come away from hearing one of those *leçons*—those finished improvisations of his—without being filled with delight, mingled with astonishment*.

As an operator, M. Dupuytren was unequalled for self-possession, and the felicity of his expedients. In mere manual dexterity he may have been surpassed by M. Roux, and one or two others of his junior brethren; but there is much in an operation besides its mere mechanical part; and for all the rest—the imperturbable *sang-froid*—the general mental resources—the *morale* of the operation—who was to be compared with Dupuytren? The fastidious have sometimes whispered that there was a desire of display in his method of operating; but this, we hold, was

* The last two courses of Clinical Lectures ever delivered by M. Dupuytren, and which were corrected by the Baron himself, are contained in the three volumes of the GAZETTE immediately preceding the present.—E.G.

founded on the confidence of the master.

His published works are not voluminous, consisting only of a few well-known monographs, memoirs, and articles contributed to some of the *Dictionnaires;* his best claims to the gratitude of posterity are to be found in the practical benefits which he conferred on surgical science. These are numerous and highly valuable, shewing that he was at least quite as ingenious in devising new methods in emergencies, as he was dexterous in putting them in execution. In a word, the French have lost in Dupuytren, a surgeon, who, for sagacity in diagnosis, skill and ability in practice, and unrivalled accomplishments as a teacher, could vie with any other in the world. His name will be handed down in the annals of his country along with those of Paré, Petit, and Desault.

DEATH OF M. FODERÉ.

The distinguished author of the *Traité de Médecine Legale*, and other works on Physiology and Hygiène, died lately at Strasburgh, where he held a professorship. He was in his seventy-second year.

CONCOURS AT MONTPELLIER

For the Chair of Médecine Légale.

An interesting account is given, in the *Journal Hebdomadaire*, of the opening of this Concours. M. Lallemand presides, and the jury consists wholly of professors and members of the Faculté; none of the practitioners of the town having accepted the proffered honour of a seat on the bench. The candidates are eleven in number—namely, MM. Faure, Eusèbe Dessale, Viguier, Kunholtz, Bertin, Réné, Boileau de Castelneau, Jaumes, Valette, Trinquier, and Boyer.

Six sittings have already been occupied in hearing the first trial, which consisted in each candidate reading publicly a paper, written by himself, on a given subject. The subject proposed was—"To give a systematic *exposé* of the knowledge, theoretical and practical, connected with the study, teaching, and practice, of *Médecine Légale:*" and the *concurrens* were allowed eight hours for the composition of their respective papers.

M. Réné seems to be the favourite so far. "The easy and unconstrained manner of this gentleman," says the reporter of the *Journal Hebdomadaire*, "his agreeable voice, and the novel mode in which he broached his subject, introduced him at once to the good graces of the audience. He received several salvos of applause. M. Réné has all the air of a finished teacher; and the view he took of the knowledge requisite for, and the duties required of, the medico-legal professor, shews that he is well prepared for such a situation." M. Bertin seems to have acquitted himself next best.

Eusébe Dessale, whose reputation as a writer is considerable, poured out an abundance of erudition, when it came to his turn, which was but coldly listened to by the audience: they gave him no applause, being probably fatigued by his elaborate historical detail. Yet his composition, according to the reporter, exhibited a rich profusion of intellect, combined with the resources of a most brilliant imagination.

But perhaps the most energetic and eager of the candidates is M. Boyer; who, if he did not display a large stock of erudition, did at least his powers of memory. In the course of his paper, having occasion to quote an opinion of Hippocrates, "I give the *text* of this author," says he, "not having time to translate it;" and here followed a long passage in Greek!

CASE OF RUPTURE OF THE TENDON OF THE BICEPS FLEXOR CUBITIS *.

By Sir Geo. Ballingall.

Mr. D——, a healthy active man, about 50 years of age, well known to many members of this Society as an eminent chemist and druggist, while raising a heavy weight, with the tips of the fingers of his right hand, suddenly felt a snap, accompanied with a numb pain, in the lower part of the arm, a little above the elbow. The weight instantly

* Edinburgh Medical and Surgical Journal.

dropped from his hand, and he was conscious of an inability to use his arm as formerly. On endeavouring to take off his coat, within a few seconds after the accident, he had great difficulty in doing so, owing to the swelling which had already taken place in the arm. On examination, there was observed a large tumor about the middle of the arm, occupying the seat of the belly of the *biceps* muscle. This being considered by Mr. D. as arising from effusion, he had a pretty tight bandage applied. He now felt scarcely any pain, and comparatively little inconvenience in the use of his arm.

Next morning, on removing the bandage and examining the arm carefully, Mr. D.'s son, a medical man, was of opinion that the tumor, which had now increased much, arose entirely from the retraction and swelling of the *biceps* itself. In this opinion he was confirmed by finding, that, in the hollow which existed below the tumor, there could be detected a body, apparently the tendon of the *biceps*, which was loose at one extremity, and could be moved from one side to the other with great facility. Bandages were now applied, consisting of two pieces of leather accurately and tightly laced, one on the arm and the other on the fore-arm, with a strap passing from the lower to the upper piece of leather, for the purpose of keeping the arm in the bent position. Owing to the patient using his arm much, the bandages were not kept accurately applied, and after ten or fourteen days they were thrown aside.

The tendon has gradually contracted adhesions to the neighbouring parts; and although there is still considerable swelling of the muscle, and some difference between the form of the two arms, yet the patient can use the arm tolerably well. It is not by any means so strong as formerly, and he cannot make any great exertion with it. He experiences difficulty, and some degree of pain or cramp, in attempting to raise a weight with the points of his fingers, and finds the power of pronation considerably impaired in the affected arm.

The preceding history of this very rare accident was drawn up at my request, by my friend, Dr. J. H. Balfour. Having been in the country at the time Mr. D. sustained this injury, I had no opportunity of examining his arm until nearly a week afterwards, when I was led, as others had been, to conclude that the tendon of the biceps was undoubtedly ruptured, or perhaps rather torn from its attachments; for although the tendon could not now be moved freely from one side to the other, yet, upon throwing the muscles of both arms into action by bending the fore-arm against a resistance, the tendon of the left biceps sprung out as it were, and became tense, while no such thing happened in the right arm—the flexion of the fore-arm being apparently accomplished by the *brachiæus internus*, the flexors of the carpus and fingers.

On examining the arms a few days ago, at a distance of eight months from the accident, I find that there is a considerable difference in their figure—the belly or prominent part of the *biceps* in the right or injured arm being higher up, and somewhat different in shape from that of the left. Immediately below the junction of the fleshy with the tendinous part of the muscle, there is a considerable thickness, or swelling, apparently in the tendon, and when the muscle is thrown into action, the tendon of the injured arm is less prominent and distinct than that of the opposite side. Mr. D. still finds the strength of the right arm considerably impaired. He complains of some difficulty in pronating the hand, and more especially in alternately rotating the radius outwards and inwards, as he has occasion to do in the act of pouring any powdered substance out of a wide-mouthed bottle into the scales. This last-mentioned circumstance I am particularly induced to notice, because, from the actions usually assigned to the biceps, it might have been supposed that the act of supination, rather than that of pronation, would have been impaired.

LECTURE
ON
HÆMORRHOIDS;

Delivered at St. George's Hospital, Feb. 3, 1835,

By Sir B. C. Brodie, Bart.

In the present lecture I purpose to make some observations on the disease which we call piles, or hæmorrhoids.

A patient consults you, complaining of swelling, pain, and tenderness, in the neighbourhood of the anus: you examine the part, and find on its verge a number of tumors, about the size of the end of the thumb or finger, with broad bases, not

very distinct from, but running one into the other, covered by the common integuments, and of a more or less purple appearance. If you cut into one of these tumors there is immediately a flow of venous blood, followed by a small quantity of arterial blood, such as might arise from a cut any where else. On making a section of the tumor, it presents to the eye the appearance of dilated and tortuous veins: in fact you cannot doubt that they are dilated veins; they are exactly like varicose veins of the leg. The tumors which I have described are situated below the sphincter muscle, and we call them *external piles.*

Another patient consults you, complaining also of a swelling at the anus, accompanied by pain and tenderness. You examine the part, and find a number of tumors of a different kind. These, too, have broad bases, and run one into the other, forming a circle, which projects below the anus. They are covered, not by the common integument, but by the mucous membrane of the rectum protruded from above the sphincter muscle. On making a section of one of these tumors there immediately flows venous blood, and arterial blood may flow afterwards. On looking at the divided surface, it is evident that the tumor was composed of a large tortuous vein. It is the accidental enlargement of these tumors which causes them to protrude externally; but they are formed above the sphincter muscles, and we call them internal piles, or hæmorrhoids.

I cannot doubt that piles are just what I have mentioned—dilated varicose veins. This is the common theory of their formation, and I certainly believe it to be correct. If you cut through piles, and dissect them, as it were, in the living person, you see that they are made of dilated veins; and if you dissect piles in the dead body, you find them just the same. If you insert the pipe of a syringe into the trunk of the inferior mesenteric vein of a person who had laboured under piles, the piles become all dilated largely with the injection. I know that some have held a different opinion concerning the formation of these tumors, and have supposed that they were not composed of dilated veins: but I apprehend that they have been misled by examining the parts in the advanced stage of the disease. If you wish to know what any disease really is, you must make your dissection of it in its origin; for in its progress, one morbid change is followed by another, and when a disease has lasted for a considerable time, you find various appearances in addition to those which existed in the first instance.

Those ultimate changes which take place in cases of piles, are exactly similar to those which occur in connexion with varicose veins of the leg. You know that at first the veins of the leg are simply varicose, or dilated; that at last they become inflamed; that lymph is deposited in the cellular membrane surrounding them, and that at last there is a great mass of induration, in which the diseased blood-vessels are, as it were, imbedded. So it is with the veins of the anus and rectum. At first they become simply dilated; repeated attacks of inflammation cause an effusion of lymph into the adjacent cellular texture, and then the pile appears like a solid tumor; in the centre of which, however, you still find the dilated vein in which the disease originated.

I have divided piles into internal and external; but, in fact, it is the same veins which are affected in both cases. The veins run on the inside of the sphincter muscle, and where the muscle compresses them there can be no dilatation of them: it is a bandage constantly operating to prevent the dilatation in this particular part; but above and below the muscle the veins become dilated.

Whatever tends to obstruct the return of the blood from the inferior mesenteric vein will lay the foundation of piles. It is said that persons with diseased liver are liable to piles; and no doubt they are likely to be so more than others, because the hard and indurated mass of a diseased liver interferes somewhat with the return of the blood from the abdominal viscera through the *vena portæ*. However, a great many persons have piles who have not diseased liver. The most common cause of piles is obstinate costiveness. Where the colon becomes loaded, and especially the sigmoid flexure, with hardened fæces, there is a pressure on the trunk of the inferior mesenteric vein, which interrupts, in some degree, the return of blood from its branches. Women, during pregnancy, are liable to piles, the pressure of the gravid uterus producing the same effect as an accumulation of fæces; and women who have borne children many times are liable to piles ever afterwards, the veins which have been repeatedly kept in a state of dilatation not becoming again permanently contracted afterwards. Piles are more frequent in the upper classes of society than in the lower. You know that in hospital practice you see comparatively few cases of piles, but out of it, I must say that they form a very large proportion of the cases that come under my care. The reason of this difference is to be found in the different mode of life in the various classes of society. The better classes take but little exercise, and they are more liable to constipated bowels than the lower classes, who take much exercise and live a great deal in the open air. There is a notion that those

who take aloetic purgatives are more liable to piles than others; but I must acknowledge that I am not quite satisfied of the fact. I have a respect for all popular notions, believing that there is in general some truth at the bottom; and I will not say, as every body thinks so, that aloes will not make people liable to piles, but I am sure they do not produce that effect to the extent that is supposed; and I could not be certain, from my own observation, that they are productive of it at all. The fact is, that those who are habitually taking aloetic purgatives are persons with costive bowels, who, as I have already mentioned, are just the individuals most liable to this disease.

The symptoms which are produced by piles differ accordingly as they are internal or external; and also according to the stage of the disease. In the origin of the disease, when the piles exist only in a slight degree, the patient complains of a sense of heat and itching about the anus; and every now and then, when he is costive, the external piles becomes a little swollen and tender; the internal piles become swollen also, so as to fill up the cavity of the gut, thus exciting a sensation as though a stick, or some other foreign body, were lodged in it. The external piles sometimes inflame, swell, and become tender, so that the patient can scarcely bear them to be touched, and cannot walk without difficulty. They may continue thus inflamed for some considerable time, and then the inflammation may subside; the piles generally returning to the condition in which they were before the attack of inflammation came on, but not always.

Sometimes an abscess forms in one of these inflamed external piles, and bursts externally. The abscess may be troublesome to heal, but when it is healed it is found that the cavity of the vein is obliterated, and that it is, in fact, cured. Such an abscess as I have just mentioned must be distinguished from a *fistula in ano;* from which, indeed, it is essentially different, as I shall explain more fully hereafter. Sometimes, when an external pile is inflamed, the blood in it becomes coagulated, and it is then hard to the touch. If under these circumstances you slit open the pile with a lancet, there comes out a mass of hard coagulum, perhaps as large as a pea or a horse bean; the cavity inflames, suppurates, and granulates; the same thing happens as though suppuration had taken place in the first instance, and the pile is obliterated. But if you do not slit open the pile, and leave the disease to take its own course, the cavity being blocked up by the coagulum, the vein becomes obliterated, after which the coagulum is gradually absorbed, and the pile is cured; that which was a pile before being now converted into a flap of skin. Just the same circumstance happens with varicose veins of the leg, where sometimes there is a natural cure, in consequence of the coagulation of blood in the dilated vessels. Sometimes, when a pile is thus distended with coagulated blood, the skin becomes so much attenuated that it gives way in some one point, and the blood being gradually squeezed out, suppuration probably takes place; and the case proceeds just the same as if you had opened the pile with a lancet. It is very common for external piles to undergo a process of natural cure in one or other of the ways which I have now described; and by examining the parts, you may ascertain whether these changes have taken place, as every one of them, after the cure is effected, becomes at last converted into a fold or flap of skin. Thus, if you see a patient with three or four loose folds of skin at the margin of the anus, you may know that these were formerly piles. At first these folds of skin are large, loose, and pendulous, but gradually they become contracted, till at last they give no sort of inconvenience to the patient.

Internal piles, as I have already told you, in slight cases produce heat and itching; and when inflamed, they give rise to a sensation as if there were some foreign body lodged in the rectum. Sometimes they are so much distended, that the gut is incapable of containing them, and they are pushed out through the anus, forming a tumor, which, while it projects externally, is still covered by the mucous membrane of the bowel. When internal piles are large, they always protrude when the patient goes to the water-closet, and afterwards go up spontaneously. If they be larger still, after going to the water-closet they will not return spontaneously, but the patient is under the necessity of pushing them back with his hand. If they be larger still, they come down at other times, especially when the patient is walking, so that he cannot well take any exercise. Sometimes you see one small internal pile permanently protruded, forming a red vascular tumor of the size of the extremity of your little finger. This is painful, and otherwise very troublesome, to the patient, by keeping up a great and constant discharge of mucus. Sometimes there is a large protrusion of internal piles for several days, then they gradually become reduced in size, and go back into their proper place above the sphincter muscle. In short, with respect to the protrusion of internal piles, there are all possible varieties of circumstances: they may protrude occasionally, for a short time, or for a long period; they may be constantly protruded; or there may be a large protrusion at one time, and a small constant protrusion besides. Whenever the protru-

sion, be it large or small, takes place, there is an abundant secretion of mucus from the rectum; the piles themselves are sore to the touch; the surface is red and vascular; and if you put your hand upon them, you find that you can diminish their size by pressure, but the moment you take off the pressure, they are as large as ever.

In the state which I have now described, internal piles are not unfrequently confounded with *prolapsus of the rectum*—nay, in general, patients, and even most medical men, describe the disease under this appellation: but the term is improperly employed. There is prolapsus of the rectum independently of piles: the disease may even originate in piles, and yet, when once established, it is entirely different from them. In a genuine case of prolapsus of the rectum, the gut itself comes down, sometimes several inches in length. When internal piles protrude, of course that portion of the mucous membrane of the bowels covering them is pushed down, because they could not come down without it; but you will easily understand that this is entirely a different matter from the whole length of the rectum, or even a large portion of it, coming down of itself. The distinction between these two diseases is very important, and you should be careful not to confound them together.

Internal piles, in the state which I have just described, give the patient a great deal of inconvenience; besides which, they are liable to irritate the neighbouring parts—sometimes producing the frequent desire to make water, at other times inducing spasm in the muscles which surround the membranous part of the urethra, so as to cause complete retention of urine. Internal piles in this state are liable to discharge a large quantity of blood; and hence it is that they have their name of *hæmorrhoids*. You might suppose that the blood was venous, but it is arterial. Piles do not bleed in the early but in the advanced stage of the disease, when there is an increased determination of blood not only to the veins but to the mucous membrane and cellular texture by which they are surrounded.

The quantity of blood lost from internal piles varies in different cases: sometimes there is a little tinge of blood when the patient goes to the water-closet, and nothing more; at other times a large quantity is lost every time he goes there, so that as much as six or eight ounces are voided daily; and then there are the usual consequences of hæmorrhage—the patient is weak, his countenance blanched, and his appetite voracious. I have known cases in which the patient was in danger of becoming dropsical, in consequence of the profuse loss of blood going on for a considerable time.

Inflammation sometimes takes place in internal piles, and ends in suppuration. The patient complains of a little discharge of matter from the anus, and you find, in addition to the mucus, that there is a little yellow stain of pus on his linen; and at first you would suppose there was a common abscess about the rectum, such as produces a *fistula in ano*. But if you introduce your finger into the rectum, you feel a small orifice in one of the internal piles, and if you pass a probe with a light hand, it goes to the bottom of the abscess, which is perhaps a quarter of an inch in depth, or thereabout. The parietes of the abscess, however, are very thin and weak, easily broken down, and if the probe be not lightly introduced, it will run through them into the loose cellular texture external to the mucous membrane. The cellular texture also is very loose and yielding, offering scarcely any resistance to the probe, so that it will run in every direction; and hence it is that I have sometimes known a small abscess or an internal pile to have been mistaken for a very long sinus. You ought to be very careful not to fall into this error, which you might easily do—nay, in all probability would do—in the first case of the kind that occurred to you, if I did not give you this caution.

I have mentioned that there is sometimes a natural cure of external piles; and I will now state how a natural cure of internal piles may take place also. Where piles of a large size protrude, completely filling up the orifice of the anus, the sphincter muscle is contracted upon them like a ligature, and causes them to become more swollen than when they were first protruded; just as a ligature on the arm makes the veins of the fore-arm and hand turgid previously to venesection. But the piles may be larger still; the sphincter muscle may contract more powerfully upon them; and then the pressure not only interferes with the return of the venous blood from the pile, but prevents the entrance of arterial blood into it. It acts as a ligature acts in a surgical operation—on a polypus of the uterus, for example. There is not a sufficient circulation in the protruded piles for them to retain their vitality; mortification takes place, sloughing follows, and thus the piles are destroyed. I have known several cases cured in this manner, and there is little or no danger in the process. I have sometimes known medical men to be alarmed at a case of this kind, confounding it with those of mortification from other causes; but the alarm is without foundation. The

late Dr. Pearson, who was for a very long period of time physician to this hospital, was the physician and friend of the celebrated Mr. Horne Tooke. Many years ago I was dining with Dr. Pearson, and after dinner he gave an account of Horne Tooke's illness. He said that he had long laboured under piles; that at last mortification had taken place; that there was no chance of his recovery; and he added, that he had that morning seen him for the last time. I remember that in the middle of this history there came a knock at the door, on which Dr. Pearson said, "Here is a messenger with an account of my poor friend's death." However, it was some other message; but by and by a messenger did arrive, saying that Horne Tooke was much the same, or a little better. It turned out, as I have been informed, that the piles sloughed off, and that from this time he never had any bad symptom. In fact, he was, if I have been rightly informed, cured of a disease which had been the misery of his life for many years preceding, and he lived for some years afterwards.

Treatment.

In considering the treatment of piles, we will first suppose that you are consulted when the disease is in its earliest stage. The patient complains of a sense of heat and itching about the anus, and perhaps there is already a slight protrusion of the piles. You may cure him, in general, by a very simple process. Keep the bowels gently open; take care that he is not costive on the one hand, or violently purged on the other. The best aperient for this case is the following:—One ounce and a half of *confectio sennæ*, half an ounce of *sulphur precipitatum*, and then *mel rosæ*, as much as is necessary to make an electuary, and let the patient take about a tea spoonful, or what he finds necessary, of this, every evening. This is all that is wanted in many cases; but at the same time he should avoid drinking much wine; and if he be of sedentary habits, he should if possible alter them, and take exercise. If this should not relieve him, in addition to what I have just mentioned let him inject half a pint of cold water, fresh from the pump, as a lavement, every morning after breakfast, and keep it up as long as he can. This will give him immediate comfort, but it requires to be persevered in for many months; and perseverance in this plan of treatment will sometimes make a cure even of very bad cases of piles. You may, if you please, add something to make the water more astringent, as alum, the *tinctura ferri muriatis*, or the patient may use cold lime water. A friend of mine, a practitioner at this end of the town, informed me that for many years he had used cold lime water in cases of piles, with the best result; and I have employed it in several instances lately, in which I think it has been serviceable.

There is a medicine that is very often useful in those cases where these simple expedients fail, namely, the *confectio piperis composita*, which is similar to what was once very celebrated as Ward's paste. It is composed of black pepper, fennel seeds, elecampane, and honey; and the dose is a piece of the size of a nutmeg three times a day. It is like eating coarse gingerbread; it may be a little disagreeable to be taken, but still it may be taken easily enough; and the patient must persevere in its use for a considerable time. Very severe cases of piles are sometimes cured by it. A lady came to me with one of the worst cases of this disease that I ever saw: the piles were so large, and protruded so constantly, that I did not think there was any chance of curing her, except by the operation to be hereafter described, and I advised her to submit to it. She said the piles made her miserable, and she should be very glad to be cured on any terms; but she was compelled to pay a visit in the country, which would render it necessary to delay it for a month. I thought the delay for a month could not hurt her, and under these circumstances I recommended her to give Ward's paste a trial, and see what it would do for her. I heard nothing more of her for six or eight weeks, when she came back, and said she was happy to inform me that she had taken the paste regularly, and was now quite well. It is of no use to take this remedy for a week, a fortnight, or a month; it must be persevered in for two, three, or four months.

How does the Ward's paste operate? I know a case in which a patient, labouring under stricture of the rectum, had indiscreetly taken an immense quantity of Ward's paste, and in which the colon was found quite full of it after death. It is evident, that, except any small portion which may be digested, the Ward's paste passes into the colon, and that it must become blended with the fæces; and I suspect that thus coming in contact with the piles, it acts upon them as a local application; much as *vinum opii* would act upon the vessels of the conjunctiva in chronic ophthalmia.

In confirmation of this view of the *modus operandi* of Ward's paste, I may mention an observation of the late Sir Everard Home. He had a patient labouring under piles, and he recommended him to take Ward's paste. The patient, little thinking that

something put into the stomach was to cure disease in the rectum, crammed as much as he could bear of it up the rectum. I dare say it gave him a great deal of inconvenience, but, as Sir Everard Home reported, it cured him; and Sir Everard said that since then he had used it as a local application in some other cases, with manifest advantage.

I mentioned that a patient with stricture of the rectum had indiscreetly taken a large quantity of Ward's paste, and that the remains of it were found distending the colon after death. I recal your attention to this circumstance now, because it will serve to impress upon your minds the necessity of always giving the patient some gentle aperient occasionally at the time that the Ward's paste is being taken. This is not the only medicine of this description which may be used in cases of piles. Cubebs pepper, a scruple three times a day, may be given with advantage; it operates, I suppose, in the same manner as Ward's paste. In some cases of this disease, where there is a great deal of irritation, the patient will derive benefit from copaiva combined with caustic alkali; half a drachm of balsam of copaiva, with fifteen drops of *liquor potassæ*, may be rubbed down with two or three drachms of mucilage and cinnamon water, and taken three times a day. This answers a very good purpose, soothing the piles, and keeping the bowels gently open at the same time.

If you are called to a patient when the external piles are inflamed and swollen, your best way is to make him remain quiet in the horizontal posture, which takes the weight of the col mn of blood off the piles. You may, if you please, apply leeches in the neighbourhood, but not on the piles themselves, for the leech-bites will cause them to become inflamed, and to fester; or, if the piles be much distended, you may puncture them with a needle. Acupuncture, on the whole, relieves the patient more than the application of leeches; and there are these advantages in it, that the puncture of the needle does not cause the piles to fester, and that the relief is immediate. By puncturing them in several places you let out a large quantity of venous blood, and the benefit arising from this is great. Besides this, you may keep a piece of rag constantly applied to the part, wetted with some cooling lotion; and the patient should take some gentle aperient, active purgatives being avoided.

When internal piles are inflamed, swollen, and protruded, you should try first of all to push them back into the gut. Take a cambric handkerchief, or a soft old linen rag, squeeze out the blood from the piles, and, if you can return them into the bowel, it is so much the better; it will relieve the patient very considerably. But if you cannot push them up, or if when pushed up they immediately come down again, you should then keep the parts wet with a rag bathed with a cooling lotion, let the patient remain in the horizontal posture, and keep the bowels gently open, without purging. Here also, as in the case of external piles, the patient will derive much benefit from acupuncture in several places. Punctures made with a needle, neither on this or any other occasion, so far as I know, occasion inflammation or any other inconvenience; they evacuate the blood, relieve the tension and swelling, and do a great deal of good without any harm.

The observations which I have now made relate to the treatment of piles under ordinary circumstances. In more aggravated forms of the disease the patient must be relieved by other methods; but I must defer the consideration of the operation for piles till the next lecture.

ROYAL INSTITUTION.

Friday, Jan. 30, 1835.

Newtonian and Undulatory Theories of Light.

Dr. Ritchie gave a good practical lecture on this subject, cramped only by the difficulty of getting so much matter into so limited a space. He explained how far the Newtonian *fits* of easy reflection and refraction corresponded with the more modern *waves*; and he pointed out the strong analogy between the undulatory theory of light and the received doctrine of sounds. Many of Dr. Young's experiments and diagrams were exhibited; and, in fact, with the exception of a few illustrations by Fresnel, Arago, and one or two other modern *savans*, we could not perceive that there was any thing very important brought forward that is not to be found in Young's lectures and papers in the Philosophical Transactions, published more than thirty years ago. We state this, because we think that due honour is not paid to the merits of our illustrious Young, it being too much the custom to refer altogether to recent authorities, although they have produced very little in addition to his stock.

Friday, Feb. 6.

Dr. Faraday on the Induction of Electric Currents.

It had been announced that Dr. Lardner was to give a lecture this evening on Hal-

ley's comet; but that gentleman not being forthcoming, Professor Faraday was obliged to supply his place, and a subject for the *conversazione*, at a very short notice. With his usual readiness, and consummate ability as a lecturer, he gave the audience an admirable account of his paper on the *Induction of Electric Currents*, which was read before the Royal Society last night. We cannot venture to describe the series of experiments by which he illustrated his facts; but amongst the most striking we must not omit to notice his perfect demonstration that the intensity of the shock from an electric current depends upon the length of the conducting wires. Some of the magneto-electric machines recently constructed for giving shocks were shewn; they seem to have more power, and to be more manageable, than the machines ordinarily used for medical purposes.

MIDDLESEX HOSPITAL.

Lithotomy.—Removal of four Calculi.

John Harris, æt. 28, was admitted into the hospital on Tuesday, January 6, with symptoms of stone in the bladder, under the care of Mr. Tuson. The patient having been sounded three times, and a consultation being held, the operation was fixed for Friday, January 23.

A staff being introduced into the bladder, having a groove on its under and right side, an incision was made with a scalpel (which had its cutting edge extending but an inch in length), in the usual place in the perineum, which divided the skin. The superficial fascia and adipose substance was next cut through, and the operator, Mr. Tuson, proceeded to divide the transversus perinei and transversus perinei alter, and the deep-seated fascia, to dissect along the membranous part of the urethra, until he arrived at the lower margin of the prostate gland. The edge of the scalpel was then directed upwards, towards the groove in the staff, and the upper part of the membranous portion of the urethra divided; the scalpel was then placed in a lateral direction, and the prostate gland was cut through, together with the neck of the bladder. The urine having escaped, the index-finger of the left hand was introduced into the wound, and three stones were felt in the bladder. The staff was then withdrawn, and the forceps introduced upon the index-finger. Two stones were removed with great facility; the third was of a large size, and the outer layer of this stone gave way beneath the forceps, so that it could not be so readily removed. The scoop was passed into the wound, but ultimately the third stone was removed by the forceps, assisted by the index-finger of the left hand, which was introduced into the rectum for that purpose. A fourth stone was also extracted. Some small fragments of stone were found to adhere to the mucous coat of the bladder, and consequently the bladder was injected four or five times, and the patient was then removed to his bed.

The time the operation lasted, from the first incision to the extraction of the fourth stone, was a few seconds above fifteen minutes. At four o'clock the patient was visited, and he then complained of a sensation as if two bones were grating together. The finger was introduced into the wound, and some coagulum removed, but no fragment of stone was to be felt.

10 o'clock.—Pulse quiet; does not complain of any pain, nor does he feel the same sensation as when last he was visited. The urine flows freely from the wound.

℞ Tinct. Camph. 3j.; Mist. Camph. ℥iss. statim.

24th.—Feels quite comfortable; no pain; urine coming freely from the wound; bowels have not been open; pulse a little excited, the effect of the operation.

℞ Haust. Salinus, c. Magnesiæ Sulph. 3j. M.

10 o'clock, P.M.—Bowels have not been moved; pulse quiet; skin natural; complains of no pain, either in the wound or upon pressure.

Rep. Haust. c. Tinct. Camph. comp.

25th.—Quite comfortable; no pain; had a very good night, the same as the night before; has not rested so well for many years as since the operation. Urine comes very freely from the wound. The lint that was between the wound has been removed, and an effort was made by the surgeon to introduce another piece, but unsuccessfully, as the patient takes hold of the hands of the surgeon, and will not let him touch the wound. The house-surgeon introduced a small portion of lint into the bladder, through the wound, in the course of the afternoon. Bowels have not been moved.

Haust. Sennæ, c. Magnesiæ Sulph. statim.

10 o'clock, P.M.—Bowels have not been acted upon.

Rep. Haust. Sennæ, c. Magnesiæ Sulph. statim.

26th.—Quite comfortable; bowels have been moved once; no pain. Urine comes freely from the wound.

27th.—No pain; good appetite; skin

and pulse natural. A mutton chop was ordered for his dinner.

28th.—Going on quite as favourably.

29th.—Just the same. Some porter was given him in addition to the chop.

30th.—Going on well; wound healing, and looking quite healthy.

31st.—Still improving.

Feb. 1st.—Going on quite favourably; wound healing. Some warm water was injected down the urethra, for the purpose of inducing the urine to flow through its natural passage.

2d.—Going on quite well; the wound appears as if it would heal in a few days. The man has not had a bad symptom since the operation.

GUY'S HOSPITAL.

Case I.—*Lithotomy.*

James Smith, a healthy-looking boy, ætat. six years, had laboured for some months previous to his admission into Guy's Hospital under symptoms of calculus vesicæ.

Jan. 27th.—He was this day brought up for operation, at 1 P.M.

The operation was performed by Mr. B. B. Cooper, in a short space of time, smoothly and distinctly. The steps of the operation being very well performed, a stone, of moderate size and roundish form, was extracted.

The resistance offered by the patient, and the great trouble that was experienced in fixing his pelvis, much increased the difficulty of the operation. The boy was put to bed; he has never had a bad symptom; and at the time I write this, he is walking about the yard, passing all his urine per urethram, and is quite well.

The calculus has been analysed, and found to consist of nitrate of ammonia internally, fusible calculus externally.

Case II.—*Strangulated Femoral Hernia.*

Elizabeth R——, ætat. 66, a flabby and rather corpulent woman, was brought into Guy's Hospital, February 10th, at half-past one, with symptoms of strangulated hernia. She stated that she had never been subject to hernia previous to Thursday last, the 6th instant, when she first perceived a swelling in her left groin, accompanied with vomiting and constipation of the bowels; this had never gone up, but increased in pain and tenderness until her admission.

Mr. Cooper, having failed to reduce the hernia by taxis, at two o'clock proceeded to operate.

The operation was one of more than common difficulty, owing to a large deposit of fat between the fascia superficialis and the fascia propria, and also between the fascia propria and the sac. Another slight impediment arose from Mr. Cooper having passed the director *through* the fascia propria and *over* a small band of it, which thereby escaped the edge of the knife; this band was then divided, and the intestine returned, but not in a very favourable condition.

Feb. 11th.—The patient's bowels were relieved during the night, but she has had no stool since; the injections have been administered; she has vomited several times; and her present state, combined with her previous habits of life, which have been far from regular, render the prognosis any thing but favourable.

Case III.—*Lithotomy.*

At this hospital, on Tuesday last, the 9th, lithotomy was ably performed on a child about four years of age, who was admitted into Charity ward. Some considerable trouble was met with in detecting the stone with the sound previous to the operation. When Messrs. Key and Morgan were convinced of the presence of stone, as well as Mr. B. Cooper, the patient was tied up, and the operation commenced and completed by the latter gentleman in sixty seconds, at the moment of the extraction of the stone. The students present simultaneously gave vent to their feelings of approbation, which was immediately suppressed by the operator, who, turning to the pupils, said "that he would never receive such as a compliment." Previous to the operation, whilst being sounded, the little patient vociferated most lustily, bestowing no very elegant titles on Mr. Cooper, and used such language as could hardly have been believed capable of being uttered by such a child. The calculus, which was of moderate dimensions, quickly disappeared under the care of some person in the arena, so that the structure of the calculus we cannot form an opinion of.

The circle was unusually crowded with *intruders.*

ST. GEORGE'S HOSPITAL.

Disorganization of a Portion of the Heart—Mortification of Lower Extremities.

James Lane, æt. 45, admitted November 12, under Dr. Seymour. Complains of pain in the chest, with cough, and a sense of great constriction about the scrobiculus

cordis. The pain is not increased by deep inspiration; there is much dyspnœa, but the chest expands freely; there are occasional shooting pains in the arms; a considerable muco-purulent expectoration. Pulse 100, not hard; tongue moist; bowels open.

Appl. Empl. Canth. pectori.

℞ Subm. Hydr. grs. iij. hâc nocte. H. Sennæ cras mane.

℞ Balsam. Peruvian. ʒj.; Mucil. G. Acaciæ, ʒiij.; Mist. Amygdal. ʒx.; Syr. Papav. Alb. ʒj. M. ft. haust. bis die sumend.

17th.—Much relieved.

Rep. Pil. et Haust. Catharticus.

19th.—Dyspnœa and cough again urgent; pulse quick and sharp.

V.S. ad ʒxij. H. Salin. c. Pulv. Antim. Tart. gr. ¼, 6tis horis. Pil. Scillæ Co. gr. x. h. s.

20th.—Blood not buffed nor cupped; dyspnœa and cough relieved; expectoration mucous and free. Pulse quick, small; a very scanty motion.

H. Salin. c. Pulv. Doveri, ℈ss. h. s.

22d.— Complains much of sickness; the other symptoms subsiding.

H. Salin. Efferv. c. Tr. Opii, ♏iij. 4tis horis. Adhib. Cataplasm. Sinapis scrob. cordis si perstet nausea.

In a few days he suffered little inconvenience, except from a very large inguinal hernia of the left side, for which a truss was worn.

Dec. 1st.—The symptoms of distress about the chest have returned; the expectoration is abundant, and tinged with florid blood. Pulse hard; face livid.

V.S. ad ʒxvj. Subm. Hydr. gr. iij.; Opii, gr. j. 4tis horis.

2d.—Blood not buffed or cupped; urgent symptoms have again subsided; considerable general debility.

Resumat Haust. ex Balsam. Peruv.

℞ Cetacei; P. Gum. Acaciæ, aa. ℈j; Aq. Puræ, ʒiss.; Tr. Opii, ♏xv. M. ft. haustus h. s. sumendus.

9th.—Slight œdema of legs; dyspnœa rather on the increase; great anxiety of countenance; gums sore; pulse feeble; cannot lie on left side.

℞ Haust. ex Potass. Nitrat. c. Tr. Scillæ, ♏xv. M. t. d. s.

10th.—Having had a call to evacuate his bowels, shortly after breakfast this morning, he went to the water-closet, without taking the precaution to clothe his feet. Whilst straining there he felt suddenly a sensation of great cold creeping from the soles of the feet up to the groins. This was immediately followed by pain of the most severe character, running the same course. He had scarcely time or power to reach his bed, when a most violent difficulty of breathing seized him, threatening every instant to end in suffocation; his struggles for breath were so strong as to resemble convulsions. In a short time he regained the power of respiration, but the pain in the legs, extending now only so far as the knees, remained unabated. The cutaneous sensibility below the knees was much reduced, but not destroyed. He states that at the onset of the attack he felt some trifling pain in the chest, but no sensation as if any thing had burst. Pulse very feeble and quick; countenance extremely anxious.

Catapl. Sinapis pedibus. Habeat Sp. Vin. Gall, p. r. n.

℞ Subcarb. Ammoniæ, gr. vj.; Tr. Opii, ♏xx.; Sp. Æth. Sulph. Co. ʒss.; Mist. Camph. ʒij. Statim et h. s.

11th.—Coldness and discoloration of the right leg, as from impending mortification; slight orthopnœa; expectoration deeply tinged with blood; pulse 110, stronger; countenance less anxious.

Appl. Lotio Spiritus. tepid. crurib.

℞ Ol. ricini, ʒss. statim. Pt. in usu Sp. Vin. Gall. et haust. Opiat.

12th.—Had a quiet night; both legs cold, but especially the right, which is now blue some distance up; pulse 130, weak; respires with facility.

Liniment Camph. Co. cruribus. Rep. alia.

From this time the mortification in the right leg made rapid advances, the limb becoming in two or three days black, cold, and œdematous, with a distinct line of demarcation just below the knee. In a day or two more this boundary was overstepped; black spots made their appearance on the thigh; great pain was felt in the groin, and a disposition to gangrene was also observable in the left leg, accompanied by œdema. The pulse became scarcely perceptible. The symptoms of disease of the chest did not return, and the patient died of the gangrene on the morning of the 18th.

Sectio cadaveris.—On opening the chest, the left lung was observed to be perfectly sound; the inferior lobe of the right seemed congested, and there was a portion, of the size of a pigeon's egg, in which the minute vessels had given way, forming apoplexia pulmonis. The pericardium appeared healthy; the heart was dilated to

nearly twice its natural size, and its muscular structure exceedingly soft and flabby; the parietes of the right cavities were unusually thin. At the base of the left ventricle the substance of the organ was dark, disorganized, and crepitated when pressed between the fingers; the right coronary artery was obliterated; the aorta was not dilated, but presented the red stained appearance often observed in its inner coat: just above its bifurcation, and extending into the right common iliac, there were evident marks of disease; the inner coat corrugated, irregularly patched with dark red and purplish spots, and the iliac obliterated by coagulated blood, to the extent of about three inches.

Remarks.—What relation the symptoms under which the patient laboured, on his admission into the hospital, bore to the subsequent singular and fatal attack, it is not easy to say; nor, indeed, is it very manifest that they bore any. His complaint was regarded as an ordinary attack of bronchitis, and it was prescribed for accordingly; but it was observed that his liability to relapses was greater than the circumstances accounted for; that is to say, the freedom he enjoyed from exposure to causes likely to reproduce the complaint, and the care which he took of himself, from a nervous anxiety to recover speedily, seemed oddly frustrated by a repeated recurrence of the severer symptoms of his malady. Hence a suspicion arose that causes of an internal occult nature operated to this effect; but what these causes were, the absence of all intelligible signs previous to the attack of December 10th, left not room even for conjecture.

The suddenness of that attack, and the great pectoral distress which it occasioned, led to the supposition of the rupture of some undetected thoracic aneurism. The patient seemed every instant to be on the point of expiring from suffocation. The idea of a great internal extravasation was further borne out by the extreme pallor of his visage; but his quick revival, and the no less rapid appearance of mortification in the lower extremities, again placed all in doubt; nor did any grounds appear on which to found a safe opinion, till death revealed the truth.

In considering the post-mortem appearances, we are led to ask, was the softened condition of the heart the result of recent inflammation, obscurely indicated by the symptoms which constituted the complaint supposed to be bronchitis; or was it the result of that chronic degeneration of the organ which Laennec imputes to a derangement of its nutrition, and in which the aorta and iliac arteries participated? I am induced to believe that both inflammation and previous degeneration co-operated to produce the pathological condition presented.

A Pupil.

ON FIBROUS TUMORS OF THE UTERUS*.

By Dr. Robert Lee.

The fibrous tumor is sometimes developed immediately beneath the lining membrane of the uterus, or with a layer of muscular tissue interposed. It is in this manner that the greater number of uterine polypi originate. As the tumor, or polypus, enlarges, the cavity of the uterus becomes distended as by the ovum during gestation, and its walls are excited to contract and expel the tumor, which pushes before it through the orifice of the uterus that portion of the lining membrane of the uterus by which it is covered, in a manner somewhat analogous to what takes place in hernia when the peritoneum is pressed forward by the intestine or omentum through the inguinal or crural canals. By the constant and powerful action of the uterus, the tumor is gradually forced into the vagina, where it undergoes various important changes of structure, both in its covering membrane, peduncle, and deep-seated parts. Its mucous membrane is sometimes pale, and presents little sensible change of structure, but more frequently it becomes highly vascular, hypertrophied, softened, and inflamed; or it ulcerates and sloughs, and gives rise to a sanguineous, purulent, and fœtid discharge from the vagina, and to all the other symptoms of malignant disease of the uterus. In some cases the diagnosis between a large fibrous tumor in this state filling the vagina, and a malignant fungous disease of the os uteri, is extremely difficult.

Dupuytren believes that fibrous tumors in the vagina sometimes become cancerous; but this fact has not been satisfactorily established.

We have observed in the same volume (xviii.) of the Med. Chirurgical Transactions, that if the tumor be covered only by the lining membrane of the uterus, little difficulty is experienced in expelling it from the cavity, and the pedicle is slender, consisting only of thickened lining membrane, a little cellular substance, and some small blood-vessels; but when the tumor is covered also with a layer of muscular tissue of the uterus, the root is thicker, often as large as the wrist in circumference, and

* Cyclopædia of Practical Medicine.

consists not only of lining membrane and blood-vessels, but chiefly of muscular coat. A longer continuance of uterine action is here required to force the tumor into the vagina, and not unfrequently the patient expires from the loss of blood before the tumor has descended sufficiently low to admit of the application of a ligature around its root. We are disposed to believe, from preparations in our possession, that it is not on the primitive state of the tumor or polypus, as Herbiniaux and Dupuytren have supposed, that the consistenec and form of the peduncle depend, but on the quantity of muscular fibres carried before the tumor; and that in most cases where the peduncle is thick and short, it will be found to be composed not only of mucous membrane and blood-vessels, but of hypertrophied muscular structure of the uterus. This account of the formation of uterine polypi, which is confirmed by the observations of Dr. Sims, Cruveilhier, and Boivin, will satisfactorily explain why it is unnecessary, as many have supposed, to pass the ligature for the removal of polypi close to the uterus; and it also explains a circumstanee pointed out by Clement and Puzos, that the root of the polypus which remains never grows again after the general mass of the tumor has been removed.

Though it has been demonstrated that the greater number of uterine polypi are merely fibrous tumors which have been developed under the lining membrane of the uterus, and a layer of its muscular fibres, we are not entitled to infer, as some writers have done, that these are the only tumors which pass from the eavity of the uterus into the vagina, and which are not of a malignant nature. We have pointed out other three varieties of tumors of the uterus, to which the term polypus has been applied: first, a tumor with a broad base, and generally of a flattened form, originating in a morbid growth of the lining membrane of the organ, and resembling nasal polypi; secondly, a tumor formed under the mucous coat of the uterus, which is composed of a congeries of small cysts or vesicles filled with a clear or yellow-coloured ropy fluid; thirdly, a tumor of the os and cervix uteri, arising from a morbid enlargement of the mucous follieles and glands of the part.

ESSENCE OF MILK.

A PREPARATION bearing the name of *lactoline* has just been presented to the Paris Academy of Sciences. Mingled with nine tenths of water, it yields new milk of the best sort and with the proper flavour. Lactoline is procured from pure milk, principally by evaporation without heat; and it is said that the globules, when examined by high mieroscopie power, are found to have undergone no change. When once formed, it remains unaltered by heat or moisture.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES FEBRUARY 19, 1835.

Alfred John Spencer, Belper, Derbyshire.
Joshua Ingham Ikin, Moon Allerton, near Leeds.
Griffith Davies, Dolgelley.
Thomas Henly King, Calne, Wiltshire.
Francis Hales Skurray.
James Eckley Pattison, Taunton, Somersetshire.
Frederick Collins Noble, Knowlesworth.
George Broad, Penzance.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *Feb.* 17, 1835.

Abscess	13	Indigestion	2
Age and Debility	76	Inflammation	63
Apoplexy	15	Bowels & Stomach	2
Asthma	32	Brain	7
Cancer	1	Lungs and Pleura	9
Childbirth	9	Insanity	8
Consumption	88	Liver, diseased	5
Convulsions	54	Measles	33
Croup	3	Mortification	10
Dentition or Teething	10	Paralysis	4
Diabetes	1	Rheumatism	3
Dropsy	17	Small-Pox	17
Dropsy on the Brain	16	Sore Throat and Quinsey	2
Dropsy on the Chest	3	Spasms	2
Epilepsy	1	Thrush	1
Fever	16	Tumor	1
Fever, Scarlet	7	Venereal	1
Fever, Typhus	2	Unknown Causes	11
Gout	1		
Heart, diseased	5	Stillborn	22
Hernia	2		
Hooping Cough	20		

Increase of Burials, as compared with the preceding week . . . 171

METEOROLOGICAL JOURNAL.

Feb. 1835.	THERMOMETER.		BAROMETER.	
Thursday . 12	from 37	to 47	30·08	to 30·13
Friday. . . 13	37	49	30·03	29·89
Saturday . 14	37	48	29·80	29·71
Sunday . . 15	38	50	29·60	29 50
Monday . . 16	39	48	29·44	29 52
Tuesday . 17	40	50	29·52	Stat.
Wednesday 18	33	50	29·46	29·44

Wind variable, S.W. prevailing.

Raining generally during the forenoon of the 12th; the 13th cloudy, except the evening; rain at times during the 14th; frequent intervals of sunshine during the 15th, a few drops of rain in the evening; the 16th, 17th, and 18th, generally cloudy; rain on the morning of the 18th.

Rain fallen, ·45 of an inch.

NOTICES.

We regret that we cannot find room for the papers of Mr. S.

M. Villermé's communication has reached us.

We have still to apologize to several correspondents whose papers have been temporarily postponed.

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THE

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OF

Medicine and the Collateral Sciences.

SATURDAY, FEBRUARY 28, 1835.

LECTURES
ON THE
DISEASES OF THE CHEST,
In the course of which the Practice of
PERCUSSION AND AUSCULTATION
IS FULLY EXPLAINED,
Delivered at the London Hospital,
By Thos. Davies, M.D.

Lecture XXII.
DISEASES OF THE HEART.

Having thus, gentlemen, given you an account of the local signs of the diseases of the heart, we now proceed to the description of the affections—

1st, Of the substance of that organ, and its valves.
2d, Of the pericardium.
3d, Of the large blood-vessels.
4th, Of the nervous disorders of the heart and arteries.
And finally, Of malconformations of the heart.

In describing the diseases of the heart and its valves, I shall proceed according to the following arrangement:—

Tabular View of the Diseases of the Substance of the Heart.

Hypertrophy, simple { left ventricle. / right ventricle.
Dilatation, simple .. { left ventricle. / right ventricle.
Hypertrophy, with dilatation of ventricles.
Hypertrophy, with dilatation of auricles.
Valves { mitral ..... } 1. cartilage, bone. / { semilunars of aorta } 2. vegetations { verrucous. / globular.
Carditis.
Ulcers of the heart.
Rupture.
Hardness of the substance.
Softness of the substance.
Surcharge of fat.
Fatty degeneration.
Cartilaginous, bony, and other adventitious deposits.

Hypertrophy of the Substance of the Heart.

I shall, in the description I am about to give of the morbid anatomy of the heart, adhere closely to the texts of Laennec, Bertin, and Kreyseg, because of their extreme accuracy; these descriptions will also be at once verified and illustrated by the series of preparations I shall place before you.

By *hypertrophy* is meant an increase of nutrition of the substance of the heart, the augmentation of the thickness of its muscular structure, and consequently of the parietes of the cavities of the organ: this thickness is usually combined with increased firmness of the muscular fibres; sometimes, however, though rarely, they are softer than in their natural state.

Hypertrophy may affect the parietes of either cavity of the heart; thus it may exist in one ventricle or in both, and in the auricles also, at the same time, or in a single auricle.

Simple hypertrophy of the left ventricle.—The parietes of this ventricle occasionally acquire an extraordinary thickness, sometimes at the base of the ventricle even to one or two inches. This thickness gradually diminishes from the base to the point, so that at the latter part it may not measure more than a line. The point, however, occasionally participates in the same condition, and increases to three or four lines. The carneæ columnæ are usually augmented in volume, although not always. The interventricular septum, generally, though not invariably, is affected in the same manner. The hypertrophy may vary in different parts of the same ventricle, so that it may affect exclusively the point, the base, the septum, the carneæ columnæ, or the external parietes. In proportion to the increased thickness of the walls of the ventricle, its cavity diminishes in its capacity; Laennec had seen it so small as to be incapable of holding an almond inclosed in its shell. The right ventricle in this case is flattened along the interventricular septum, and does not descend so nearly to the point of the heart as usual; and in extreme cases it appears even to be hollowed out of the parietes of the left ventricle.

It is from the increased thickness of the parietes of the ventricle being directed towards the interior or centre of its cavity, that Bertin has denominated this form of the disease *concentric hypertrophy.*

Simple hypertrophy of the right ventricle.—The parietes of this ventricle become thicker and firmer than usual; they do not collapse upon their cavity upon a section of them being made. The thickness of the muscular structure is nearly uniform, although it is generally greatest towards the base of the ventricle. The carneæ columnæ are always very large. The size of the cavity is rarely much diminished, because the thickness of the walls of the ventricle is not often very considerable: Laennec never found the thickness above four or five lines; Bertin describes a case in which it was from eleven to sixteen lines. I present you here, gentlemen, a preparation in which the parietes of the right ventricle are fully three-quarters of an inch thick, and its cavity is so diminished as to be capable only of holding a small pea: it is the heart of an infant, in whom the pulmonary artery was obliterated at its origin.

Hypertrophy of both ventricles.—When hypertrophy attacks both the ventricles, they each descend to form the point of the heart. The other anatomical characters are the same as above described.

Dilatation of the ventricles.—This affection is the *passive aneurism* of Corvisart. The cavities of the ventricles become now enlarged, and their parietes much thinner than natural. The muscular tissue is softer, and generally pale; sometimes it is of a violet colour; occasionally it assumes a yellow tint. The softening of the fibres is often so great, especially of the parietes of the left ventricle, that they may be broken down easily with the fingers. The thickest part of the left ventricle may now measure no more than two lines, and its point not more than half a line. The point of the right ventricle often becomes thinner still, seeming, indeed, to consist of the external and internal membrane of the heart only, separated by a small portion of fat. The carneæ columnæ of the left ventricle appear as if increased in number, although they are extremely thinned, presenting, by their crossing each other, a finely reticulated character. The intervertebral septum loses less of its thickness and firmness than the rest of the parietes of the heart.

This dilatation and thinning may affect a single ventricle, or both at the same time. When one only is dilated, its point descends lower than usual, although the increase of its cavity is in the direction of its transverse diameter rather than of its length. When both ventricles are affected, the heart is rounder in its form, and is almost as large at the point as at the base.

Burns believed that rupture of the heart might be caused by its dilatation; Laennec conceived also such an event to be possible; Dr. Hope mentions an instance of such an occurrence, and cites another case from Dr. Williams. I present you here with a preparation of a rupture of the upper part of the left ventricle. It seems, however, to be rather a consequence of softening, or ulceration of the muscular fibres, than of excessive dilatation.

Laennec has averted us from the mistake which might be committed, by confounding the dilatation of the heart with its distention from blood. In the latter case, the moment the cavities of the heart are opened, the distending blood escapes, and the organ collapses to its natural size; this does not occur if there be really dilatation.

Hypertrophy, with dilatation of the ventricles.—This combination constitutes the *active aneurism* of Corvisart, and the *eccentric hypertrophy* of Bertin.

Hypertrophy with dilatation of the ventricles is a very common affection; it is much more frequent than simple dilatation, and still more so than the concentric or simple hypertrophy. This disease may

affect either of the ventricles, or both simultaneously. In the latter case the heart often acquires an enormous volume. The muscular fibres become firmer. The heart is rendered rounder at its point. In some cases the ventricles are dilated, and their parietes are of their natural thickness, being what Bertin has considered dilatation of the ventricles, with hypertrophy in the direction of the extent of their surfaces. Dr. Hope states that this variety was unknown to Laennec; but although no special name was given to it by him, yet the following passage clearly denotes that he was aware of it, for in speaking of hypertrophy with dilatation of the ventricles, he says, "A un degré mediocre les ventricules sont dilatés, et leurs parois semblent seulement n'être pas amincies."

It happens, though very rarely, that some parts of the walls of the same cavity present the characters of hypertrophy, and others those of dilatation.

Hypertrophy, with dilatation of the auricles.—It is very easy to mistake organic dilatation of the auricles with their simple distention from blood; it is as easy, also, to correct the error, by compressing the distended cavities, and thereby forcing the blood from them into their communicating cavities or vessels. If they are merely distended, the auricles will then return to their natural volume; if they be permanently dilated, they preserve their size. Laennec also observes, that if their cavities be fully distended, their parietes will appear tense, and the colour of the blood is seen through them; but if they be permanently dilated, their walls are not so tense, they appear capable of holding more blood, and the colour of that fluid can no longer be distinguished.

The dilatation of the auricles, although not so rare as Laennec believed, is yet not so common as that of the ventricles. This dilatation is generally accompanied by hypertrophy, or by hypertrophy and dilatation, of the ventricles. Sometimes the left auricle may be dilated, while its corresponding ventricle is in a healthy state. Laennec states also, that he never met with evident dilatation of the auricles without a certain degree of hypertrophy. There is, however, before you, a specimen of hypertrophy of the left auricle without dilatation; but, generally speaking, his observation is perfectly correct. It requires a certain degree of habitude to distinguish hypertrophy of the auricles; for as their parietes are very thin, it might escape the observation of an unpractised observer even if they were doubled in thickness. The preparation I hold in my hand shews the walls of the left auricle to be nearly three lines thick.

The following combinations of organic changes in the parietes and cavities of the heart most frequently occur:—

1. Hypertrophy with dilatation of the left ventricle, with simple dilatation of right.
2. Hypertrophy with dilatation of the left ventricle, with simple hypertrophy of the right.
3. Hypertrophy with dilatation of right ventricle, with simple dilatation of the left.
4. Simple hypertrophy of right ventricle, with dilatation of the left.

There are other varieties, which we shall hereafter mention when we consider the causes of these affections.

It occasionally, although very rarely occurs, that a partial dilatation of the cavities of the heart takes place—a dilatation which presents all the characters of aneurism. Corvisart mentions a singular instance of this in a negro, in whom the partial dilatation of the left ventricle was so large as to form a tumor of the size of the ventricle itself. My friend Mr. Langstaff possesses two beautiful specimens of these partial dilatations; the one is of the upper portion of the left ventricle, forming a tumor of the size of a large walnut, which presents itself between the base of the ventricle and its corresponding auricle, the coronary artery crossing it; the other is a still larger aneurism of the left auricle, situated between the appendix and the mitral valves: it contains a considerable quantity of fibrinous substance, precisely similar to that which is so commonly found in arterial aneurisms. I believe the latter preparation to be unique.

Diseases of the Valves.

The valves of the right side of the heart have been rarely seen diseased. Occasionally, however, they have been noticed. Vieussens, Bertin the elder, Horn, Crewel, Burns, Laennec, Bertin the younger, Drs. Hope and Latham, all give instances of cases which they have observed. It must be noticed, however, that the indurations of the valves which they describe are almost all of the cartilaginous character, and that bony concretions have very rarely been seen. In many of these cases, also, a free communication has existed between the auricles, in consequence of the foramen ovale being open.

The cause of the frequency of disease of the valves of the left side of the heart yet remains in great obscurity. Corvisart has supposed that it arises from the fibrous structure partly forming these valves being more complete; and consequently he infers that that structure is necessary to the cartilaginous or ossific deposit. Others think that it arises from some peculiar influence of the arterial blood. I am in-

clined to the latter opinion, because we see that the parietes of all the vessels carrying venous blood, including the right side of the heart, are rarely subject to cartilaginous or osseous induration, while nothing is more frequent than their formation in the valves of the left side of the heart, and between the internal and middle tunics of the vessels carrying arterial blood.

Cartilaginous deposit in the mitral valves.—When cartilage is deposited in the mitral valves, it is always situated within the duplicature of the membrane forming it. The base of the valve is generally the seat of the adventitious matter; the auriculo-ventricular opening then becomes contracted, and assumes various forms, but usually that of a narrow chink or slit. The edges of the orifice are commonly smooth and polished, and of firm structure. Occasionally the cartilaginous matter occupies the free edge, the middle or even the whole of the valve.

Ossific deposit in the mitral valves.—If phosphate of lime be deposited, it is also in the duplicature of the membrane forming the valve, and may be situated, like cartilage, either at the base, point, or throughout the valve. The bony matter soon perforates the membrane covering it, and forms irregular granular projections, or asperities, bathed by the blood. This osseous deposit never presents the cancellar appearance of healthy bone: it is usually whiter, and breaks down with greater facility. The mitral orifice is often extremely contracted by the ossific formation; it becomes a small and irregular slit, or an opening more or less round, or sometimes even a canal, which has been seen bending like the carotid in its passage through the temporal bone. The chordæ tendineæ have, although very rarely, been observed ossified.

Ossific deposit in semilunar valves of the aorta.—The ossific matter generally commences to be deposited in the tubercula Arantii, then at the base, then on the free edge, and finally on the whole structure of the valve.

When the ossification affects the free edges of the valves only, their movements are yet tolerably complete, and the flow of blood through them is not much impeded; but when their bases and other parts become diseased, the valves unite, curve inwardly or outwardly, as Laennec describes, like certain shells, or sometimes a single valve is curved in one direction, and another in a different. They then become nearly immoveable, and remain in the position they have taken: thus they may fall inwards towards the heart, or they may lie along the internal surface of the aorta, or they may be placed permanently across the origin of that vessel. I present you with a preparation in which the natural orifice between the valves is reduced to a very small size, but, at the base of one of them, ulceration and perforation has taken place, so that two distinct, although small, columns of blood must have passed into the aorta instead of one. I need hardly state that the obstruction of the circulation must be in proportion to the diminution of the opening left by the diseased state of the valves.

Cartilaginous or ossific deposits in the valves have been supposed to depend upon inflammation of the lining membrane of the organ, or of the pericardium investing it, or of the substance of the heart itself, or from any cause rapidly and frequently increasing the circulation, or from some peculiar diathesis. Nothing, however, is positively known upon this subject.

Vegetations formed on the valves and parietes of the cavities of the heart.—There are two forms in which fleshy vegetations grow upon the valves and internal surfaces of the heart: the first is in that of warty excrescences, which have been called, by Corvisart, *vegetations* on the valves; the second, that of globular bodies, often of considerable size, which have been denominated, by Laennec, *globular vegetations*. The latter author gives the following description of them:—

Species 1.—*Vegetations on the valves.*—These often present a very similar appearance to ordinary or to venereal warts; hence they have also been named *verrucous vegetations*. They bear occasionally a striking resemblance to a small raspberry. Sometimes these bodies are greater in length than breadth, and have the form of small irregular cylinders, more or less approximated to each other. They have been seen covering the valves, chordæ tendineæ, and the internal surfaces of the auricles; rendering them rough and granulated. I have observed them extending only in a single row. Their length is rarely greater than two or three lines.

The colour of these vegetations, although sometimes whitish or yellowish-white, is usually that of muscular fibre, or a little lighter. Their texture is fleshy, sometimes similar to venereal warts, although less firm. Their adhesion varies, for it may be so strong that they cannot be torn off, or it may be so slight that they may be easily separated and scraped off by the handle of the scalpel or the finger-nail. In the latter case the vegetations are soft, and of very humid texture.

These substances have been found on all the valves, on the internal surface of the auricles and ventricles.

Corvisart believed the verrucous vegetations to be of venereal origin: there are no

proofs whatever in support of this supposition. Laennec conceived them to be formed by the organization of coagula of blood adhering to the valves and the parietes of the heart: his reasons were, that their texture closely approached to that of the most compact polypiform concretions of the blood; nay, even that a slight coagulum is occasionally found within them. Bertin and Bouillaud attribute their formation to the organization of false membranes, produced by inflammation of the membrane lining the cavities of the heart and forming the valves.

Species 2.—*Globular vegetations.*—The size of these vegetations varies from that of a pea to a pigeon's egg. I present you a specimen, where there are two attached to the mitral valve, of nearly the latter volume: their form is spheroid, ovoid, or round. They are hollow. The external surface of these cysts is smooth, the internal is rougher. Their parietes are about half a line in thickness, and have somewhat a firmer consistence than boiled white of egg. The matter contained within them varies; it is sometimes similar to half liquid blood, containing also a few coagula of that fluid—it is opaque, and occasionally of a pale violet colour, or of the colour of lees of wine, and of a pultaceous consistence; finally, it is like a thick pus, or to a substance precisely simi lar to the polypiform concretions which are frequently found interlaced between the carneæ columnæ. These cysts always adhere by a pedicle which is slightly transparent, and occasionally contains small clots of blood.

Laennec never found the globular vegetation except in the ventricles and in the sinuses of the auricles. The two I present to you are attached, by a common base, to the mitral valve: the disease occurred in a girl of fourteen years of age. I believe it to be a very rare affection.

The same opinions have been entertained by Laennec, by Bertin, &c. of the formation of this disease as of the preceding species.

Causes of hypertrophy and dilatation of the Heart.

I have thus, gentlemen, described the morbid anatomy of the heart, as far as relates to the increased thickness of its parietes, to the dilatation of its cavities, and to the diseases of the valves: I have preferred this order, for these affections are intimately connected with each other, and because valvular obstruction is so commonly, although certainly not the only cause of hypertrophy and dilatation of the heart.

To understand the causes of hypertrophy and dilatation of the heart, the following principle must be advanced: that whenever any frequent necessity exists for an increased force or exertion of muscular power, the muscles increase in their size to a certain extent, if the subject be healthy. Thus we see that in the workman who wields the heavy sledge-hammer, the arms acquire an extraordinary volume; that the same occurs to the waterman; that the muscles of the back and shoulders of the porter become greatly developed; that the legs of the chair-porter become of a great size.

If we apply this principle to the movements of the heart we may assert that whenever any permanent or even frequent obstruction exists to impede the current of the blood, that obstruction creates a necessity for an increased force or power of muscular action to overcome it, otherwise the circulation would cease. The muscular parietes of the heart then increase in thickness, or in other words, become in a state of hypertrophy.

But, as in the aged, and in persons of lax and weak fibre, or of delicate constitutions, the constant application of physical force only tends to diminish the size and firmness of their muscles, and exhaust their power, so I apprehend that in these individuals the parietes of the cardiac cavities do not increase in thickness and in force to overcome the resistance afforded by the obstruction, but yield, dilate, and become thinner, from the distention produced by the blood accumulating within them. These constitute the cases of simple dilatation of the cavities of the organ.

Mixed cases, however, frequently occur, in which nature lends her aid to overcome the obstruction, by thickening the parietes of the heart, while at the same time the cavities dilate; for if the heart, although thickened in its walls, has not sufficient power to send the due quantity of blood through its orifices at each of its contractions, that fluid must accumulate in its cavities, and ultimately dilate them. These, then, are cases of hypertrophy with dilatation, or the eccentric hypertrophy of Bertin.

Let us now proceed to the particular cases of obstruction to the current of the circulation, and their effects upon the different cavities of the heart.

1. *Obstructions caused by chronic diseases of the lungs.*—It is scarcely necessary to state that the lungs should be in a perfectly healthy condition to admit of a free circulation through them. If these organs become affected by chronic disease, more especially by chronic catarrhs and emphysema, then the blood is impeded in its transit from the pulmonary artery into the pulmonary veins, obstruction is established from the engorgement of the capillary vessels, and the pulmonary artery and right

side of the heart became unnaturally filled with that fluid. Hypertrophy, or dilatation, or a combination of both states, now occurs of the right cavities of the heart, while the left ventricle and auricle remain in their natural condition.

You will understand, however, that these affections of the right side of the heart can only be produced by pulmonary diseases of long standing. Probably many months—nay, perhaps two or three years—are required before such consequences visibly take place. These changes do not occur either from protracted hepatization of the lung, or chronic effusions into the pleura, compressing that organ; for these diseases destroy life before hypertrophy or dilatation are produced. It might be supposed that tubercular deposits would cause sufficient obstruction to the course of the venous blood through the lung, but the quantity of that fluid is then so extraordinarily diminished, that no engorgement ever occurs, sufficient, at least, to require any increased force to overcome it; indeed, the heart then generally, like the rest of the muscles of the body, decreases in volume.

2. *Obstruction caused by diseased aortic valves.*—This obstruction, when considerable, produces the most extensive alteration in the parietes or cavities of the organ,—as you may perceive by the various preparations placed before you. Let us trace its effects.

The *left ventricle*, being placed immediately below the obstruction, becomes first affected; its parietes may be simply hypertrophied, or they may simply dilate from the engorgement of blood within it; or both cases may co-exist. The *left auricle* being a continuation of the ventricular cavity, becomes similarly diseased. As, therefore, the blood cannot flow freely from, but accumulates in these cavities, it follows that the four pulmonary veins cannot either freely pour their contents into the left auricle, and they consequently become permanently filled and engorged to their capillary extremities. If the pulmonary veins are engorged to their extremities, it follows also that the blood in the capillaries of the pulmonary arteries passes with difficulty into those of the veins; and the pulmonary arterial branches, as well as the artery itself, becomes preternaturally filled. The right cavities of the heart, being continuations of the pulmonary artery, become also in an engorged condition; obstruction exists; their parietes are hypertrophied, or their cavities dilate, or there is a coincidence of both conditions; and the heart acquires an enormous volume.

Thus, gentlemen, an obstruction placed at the commencement of the aorta may affect the parietes and dimensions of all the cavities of the heart.

3. *Obstruction caused by diseased mitral valves.*—If the mitral valves be diseased, so as to cause obstruction, the same effects will be produced in all the cavities of the heart except of the left ventricle, which is placed before the impediment. Thus the left auricle becomes gorged with blood, its walls thicken, and its cavity dilates; the four pulmonary veins and the pulmonary artery are habitually distended; the cavities of the right side of the organ are similarly affected; and hypertrophy or dilatation, or both states combined, are the results.

[Numerous specimens were here shewn, exemplifying the facts, of obstruction of the aortic valves causing hypertrophy or dilatation of the different cavities of the heart, and obstruction of the mitral valves causing the same effects, except that in the latter case the left ventricle was in a comparatively healthy condition.]

But, gentlemen, diseased valves are not the only obstruction to the circulation; there are others, which, because they are not so obvious, are often overlooked: so that the heart often appears enlarged and thickened without apparent cause.

Obstruction from a contracted or dilated aorta.—The circulation of the blood cannot proceed in a healthy manner except there be a due relation between the caliber of the vessels carrying that fluid to and from the heart, and the capacities of the cavities of the organ itself. The vena cava, the pulmonary arteries and veins, are rarely diseased; but it is not uncommon to find the aorta considerably diminished or enlarged in its diameter; and either of these states becomes a cause of obstruction as much as diseased valves.

Let us suppose that the diameter of the healthy ascending aorta in the adult be an inch, the circulation proceeds with regularity; but if it be diminished to half an inch, the column of blood passing through it can only have the same diameter, or half an inch; but as the same quantity of blood has always a tendency to enter into the left ventricle, and the aorta is insufficient in breadth to discharge it, it accumulates, there is an obstruction before it in its course, the parietes of the left ventricle thicken, its cavity distends, &c. In fact, precisely the same effects are produced upon the walls and cavities of the heart as if diseased aortic valves were the cause of the obstruction. You see in this preparation [shewing it] that the ascending aorta and its arch is extremely contracted, that the left and right ventricles and auricles are hypertrophied and dilated, and that the heart has acquired an enormous volume.

Let us now suppose that the aorta, instead of being of the normal diameter of an inch, acquires that of two inches.

We will assume that the left ventricle, in its healthy state, can readily overcome the inertia of a column of blood contained in an aorta of an inch in diameter, and that then the force of the ventricle and the resistance of the fluid are so balanced, that the circulation proceeds without difficulty. Conceive, however, that the diameter of the aorta becomes increased to two inches, the column of blood within it will be of course of the same breadth —its mass is increased — its inertia is greater—it offers more resistance—it is a cause of obstruction—and the left ventricle becomes hypertrophied or dilated, to overcome it. The rest of the cavities of the heart participate in the same state, and for the same reasons as I described in speaking of the obstruction from diseased valves.

I believe, also, that obstructions to the circulation often exist at remote distances from the heart, causing that organ to be diseased. Thus it is by no means uncommon to meet with individuals labouring under hypertrophy or dilatation of the heart, who, from their occupations, are almost perpetually placed in bent positions—as tailors, shoemakers, weavers, &c. The tortuous course of the arteries must be as much a cause of obstruction to the current of blood circulating within them, as the sinuosities of the bed of a river retard the flow of the waters within it. Certainly these persons are frequently subject to diseased hearts, and they are often permanently relieved by ceasing their occupation, or by making them work in an upright position.

The parietes of the left ventricle are thicker than than those of the right, because the blood has to be propelled to a greater distance from the former than from the latter. I present you with a curious specimen of malformation of the heart, in which the emerging vessels are reversed in their position. The aorta arises from the right ventricle, the parietes of which are hypertrophied; the pulmonary artery from the left ventricle and its walls are very considerably diminished in thickness. Do moral causes affect the dimensions of the cavities, or the thickness of the parietes of the heart? I believe so. But the organ probably then becomes diseased in consequence of the rapid movements it is often thrown into from the frequent anormal influx of blood into its cavities; the heart then has to propel forwards a fluid, and consequently to overcome a resistance too frequently, and finally becomes hypertrophied or dilated.

To sum up our views of the causes of increased thickness of the parietes of the heart, or of dilatation of its cavities, or of a combination of both states, we may observe that these conditions arise from obstructions at some point of the circulation within the organ, or anterior to it in relation to the course of the current of the blood. We may enumerate these causes as follows:—Obstruction from chronic diseases of the lungs; from diseased aortic or mitral valves; from a contracted or dilated aorta; from an habitually bent or curved state of the arterial system; from moral causes, inducing too frequently an excessive influx of blood into the heart; finally, too plethoric or too weak a state of the system may ultimately produce an anormal condition of the heart, as they do of the rest of the muscles of the body, so that it may become in a state of hypertrophy or atrophy.

OBSERVATIONS

ON THE

PATHOLOGY OF NERVES.

By Hugh Ley, M.D.

Physician-Accoucheur to the Middlesex and the General Lying-in Hospitals.

[Continued from page 717.]

Diminished energy is generally the result of extraneous pressure upon a healthy nerve, or of such disorganization of the nerve itself as to destroy the continuity of the medullary filaments.

This is the last of the general propositions with which, in this investigation of the pathology of nerves, I started, and in considering which I shall for the present confine myself to the palsy of particular parts only, to the exclusion of those cases which may be denominated general palsy, whether assuming the form of hemiplegia or paraplegia. The latter diseases, connected as they commonly are with extravasation, effusion, or disease within the cranium or spinal marrow, hardly fall within the scope of my present inquiry; but a consideration of them would afford strong collateral and confirmatory evidence of the views which I entertain of the pathological character of the former.

Paralysis " which affects less than half of the body, or some one particular

part or organ*," has been denominated "partial palsy,"—a designation which has also been applied to those cases where there has been only diminished sensibility and muscular power, without a total annihilation of these functions. A term thus used, in contradistinction sometimes to more general, and sometimes to more complete and perfect palsy of the same part—sometimes meaning partial in extent, sometimes in degree without reference to extent, is somewhat equivocal, and therefore objectionable; and, upon the whole, it would probably be better to substitute, instead of partial, the word local, which conveys a more precise and accurate notion of that state, which has been well defined to be "a diminution, or an entire loss, of the power of voluntary motion, or of sensation, or of both, in some particular part or parts of the body, without coma." It is true that, consistently with the strict rules of nosological accuracy, neither alternative nor negative propositions should be admitted into a definition; but medical definitions are generally abstracts of histories, and in that of Dr. Cooke, the leading features of the malady are pointed out; it includes in its terms both the complete and the partial paralysis, with the affection of one function of a nerve to the exclusion of another, and saves us the necessity of instituting more minute subdivisions, which would encumber the memory without informing the judgment.

Local palsies occasionally arise from affections of the brain or its meninges; in conformity with the statement of Boerhaave, that "stupor and paralysis may arise in one particular muscle, and yet the fault may not be in that particular muscle, nor in the nerve, nor in the artery, nor in the veins, but in some particular part within the cranium." Palsies from such cause require much attention and active treatment, as they are frequently the precursors of more general attacks, being amongst the threatening indications of an approaching apoplexy or hemiplegia, neither to be misunderstood nor neglected with impunity. These often manifest themselves, as is well known, in the retina or other nerves of the outward senses, in the eye-lids, the fingers, or the muscles of the tongue. Examples of these local paralyses from congestion, pressure, or disease of the brain, are sufficiently numerous. I shall content myself, however, with one striking illustration, which was mentioned to me some years since by Mr. Stevenson, the eminent oculist, of Margaret-Street. A lady consulted that gentleman about some affection of her eyes, when his attention was much attracted by the extraordinarily slow articulation of the father, a clergyman from the country, who accompanied her. Upon inquiring of the daughter whether this was the father's usual mode of utterance, she did not appear to be particularly alive to any great change; but now that her attention was directed to it, she thought his mode of speaking might be rather more distinct and slow than was common to him. Mr. Stevenson, however, confident that there must be something decidedly wrong in this, strenuously advised that this gentleman should consult some physician of eminence; and he had the advantage of the advice of my estimable colleague, Dr. Maton, under whose judicious treatment his tongue was straightway loosened, and his utterance quickened. Amongst other measures, he was enjoined to observe strictly the regulation of his diet, in which he was to be very abstemious; but upon one occasion, overtaken by a storm, he was driven for shelter into a confectioner's shop, where, to insure his welcome, he devoured a couple of oyster patties. He was soon after seized with fatal apoplexy; and upon examining the interior of his skull was discovered an abscess of the brain, of considerable size, completely circumscribed, and evidently of no recent origin.

But local paralysis is much more frequent from injurious compression of nerves in their course, after they have left the brain or spinal marrow; according to the simple and perspicuous statement of Galen, that "if a nerve be compressed by any hard body which rests upon it, its function is interrupted." The observations and opinions of more recent writers upon this form of palsy, have tended to entangle a subject, in itself simple, in almost inextricable confusion. They have ascribed not only different, but even opposite, effects to the same cause, alleging that these effects will vary not only in extent, but in kind, according to the degree of pressure. A minor degree of compression,

* Cooke on Palsy, p. 46.

it has been alleged, will often be accompanied with excitement of a nerve, involving as its consequences neuralgia, if it be a nerve of sensation; muscular spasm, if a nerve exclusively of motion; and the combination of the two, if the nerve affected be a compound nerve, ministering at once to sensibility and to muscular movement. Such being the supposed result of the smaller, it has been universally believed that a greater and more complete pressure of the trunk of a nerve would occasion a diminution of energy, in the form of either simple anæsthesia, or paralysis, or both. With a strange inconsistency, it was at the same time generally conceded that this paralysis might be partial and imperfect from a less, but complete from a greater degree of pressure. It was further thought, that where sensibility was impaired or destroyed, and the power of the muscles preserved, it was the result of a less degree of pressure than when both were affected. It was with them merely an affair of more or less, not of restriction to one set of filaments in the former, of affection of both sets in the latter. Even Mr. Abernethy was not aware that his packet of nerves consisted of fibrils of varied office; a point which it was left for the ingenuity and discrimination of Sir Charles Bell, followed by Magendie and others, to announce and elucidate.

It is obviously unphilosophical to ascribe not only different, but even contrary effects to the same cause; and, as far as I have been able to ascertain, this prevailing dogma is not borne out by facts. A minute inquiry into the details of this subject, an examination of the numerous detached cases to be found in the records of our art, point clearly to the conclusion, that such contrary effects as pain and convulsive movement upon the one hand, and impaired sensibility, with or without defective muscular power, upon the other, are in reality, as they might be expected to be, the result of causes differing rather in essence than degree; and that whilst the former of these effects are the consequence of the various causes of excitement which I have already considered with some degree of minuteness, the latter are the result commonly of pressure. In the former case the function of the nerve is disturbed by a diseased condition inherent in itself; in the latter, an undiseased nerve is compressed by some extraneous agent. The existence of disease in the nerve, whether simply thickened from inflammation, or the subject of morbid growths within its neurilematous investiture, will altogether alter the results of pressure, a slight degree of which, as has been already stated, will then produce agonizing pain, or violent spasms, or even in some instances, as in the case related by Dr. Short, an epileptic paroxysm*. This distinction has been long familiar to my mind, and has not escaped altogether the discrimination of Sir Charles Bell, who has very briefly adverted to it in relating a case in which "swelling of the parts within the orbit, *compressing* the fifth nerve, caused insensibility of the part of the face to which these branches were distributed, without affecting the motion." "When the tension and swelling subsided, there was returning sensibility; but more than this, *the inflammation affecting the nerves* in their passage through the orbit, gave the sensation of excruciating pain, perceived as if in the face†." Still, even by this distinguished physiologist and practical surgeon, the difference is neither made a source of leading, or even prominent distinction; nor does he always keep it in view in his writings. Galen was well aware of the difference of effect arising from compression upon the one hand, and inflammation upon the other, and he proposes the proper cure for the latter‡.

This distinction of the effects of pressure upon a healthy and upon a diseased nerve certainly deserves more attention than it has hitherto received, and should constitute an important element in our decision as to the propriety or preference of certain operations, as it will very materially modify the results. In a recent and very valuable paper by Mr. Travers, "On the Local Diseases termed Malignant," is a case of medullary tumor of

* Ed. Med. Essays, vol. iv. p. 334.

† On the Nervous System, App. p. lxviii.

‡ Sed cum cerebro et medulla spinæ omnibus musculis non parva communicatio est, nam aut a cerebro aut a medulla spinæ nervum accipiant necesse est: qui visu quidem parvus, sed virtute minime parvus. Cognosces autem ex passionibus; nam incisus, oppressus, contusus, laqueo interceptus, schirris affectus, et putrefactus aufert musculo omnem motum et sensum. Quin et nervo inflammato non pauci spasmo correpti sunt et mente alienati: quorum quidam sic affecti cum sapientiorem medicum nacti essent, nervo inciso statim spasmo et mentis alienatione liberati sunt; sed postea musculum in quem nervus insertus erat insensilem atque inutilem ad motum habuerunt.—*De Motu Musculorum*, lib. i. cap. i.

the ham. "It had been about two years and a half in growth, and *was, from pressure upon the nerves, become exceedingly painful**." The pain was chiefly seated in the toes and outer side of the foot. The tumor was removed by careful dissection; the wound healed by granulation; the patient gradually improved in health, and soon afterwards became pregnant. In this case it is obvious that the fibular nerve was principally implicated, and the symptoms would have induced in my mind the belief that the nerve was inflamed; and unless the inflamed nerve were divided above the seat of inflammation, some recurrence of the symptoms might be anticipated. I would not, indeed, assert that such division would have been proper, because the nerve may have been merely inflamed from long-continued pressure, without partaking of the malignant tendency of the original disease; in which case, if the medullary filaments were not ulcerated through, the nerve might, upon the removal of the compressing tumor, recover its functional power; for, according to Haller, "soluto vinculo, et in nervo non læso, musculorum usus restituitur."

That the operation diminished the patient's sufferings, although not distinctly stated, is to be inferred from the improvement of her health; but time was scarcely allowed for the complete restoration of the nerve to a healthy condition before this lady became pregnant, when again she "suffered from pain in the course of the sciatic and crural nerves,—so much so as to render the use of the limb very distressing. This was attributed *to the obvious circumstance of pressure*, and she was consoled with the prospect of its being soon relieved. However, on recovering from her accouchement, which was perfectly favourable, the incapability, and more particularly the pain, were greatly augmented. The pain followed especially the course of the nerves, but was diffused so as to render the slightest pressure upon any point of the surface intolerable." "There has been no delusion, or benumbment of sensation, such as pressure occasions; the whole character of the present complaint is neuralgia, and the only remedies affording any relief have been those of the tonic class."

This case is peculiarly interesting in several particulars. It shews what has been the general impression, and consequently the ordinary language, with respect to the compression of nerves; and that it is often employed when the dependence of the symptoms upon pressure has been by no means ascertained. It is stated in general terms as an undeniable, if not self-evident proposition, that the tumor "was, from pressure upon the nerves, become exceedingly painful." But this statement involves two substantive propositions, one being the assertion of a fact, the second a mere expression of an opinion. It is a fact that there was pain; it is merely an opinion that the cause of that pain was pressure. The first admits not of question; the assertion, though expressed somewhat ambiguously, is conclusive. It was, perhaps, rather meant, that the tumor by pressure upon the nerve had occasioned pain, referred to the remote distribution of its filaments, than that the tumor itself was exquisitely painful. That simple compression, however, occasioned the pain, requires evidence in its support, and yet no other proof is offered than that there was a tumor, and that there was pain; and yet "there was no delusion or benumbment of sensation, such as pressure occasions." But notwithstanding the absence of these notorious effects of compression, the intelligent author of the paper on malignant diseases referred the original painful affection of the nerve to that cause, and appears to assent to the proposition, that its subsequent return with aggravated violence during pregnancy was also owing to "the obvious circumstance of pressure." But the pain returned or continued after the causes of pressure had ceased to operate; first, upon the removal of every vestige of the tumor, and afterwards in consequence of the delivery. Even, therefore, if the original painful affection of the nerve was at least the *indirect* effect of pressure, which is not improbable, it was afterwards clearly kept up by some other cause; and the observations I have already made upon the subject of the inflammation of nerves render it extremely probable, that inflammation glueing the nerve to contiguous parts was that cause; and this probability is reduced almost to certainty, when it is considered that after the removal of the suspected causes of pressure—the malignant tumor, and pregnancy—the suffer-

* Med.-Chir. Trans. vol. xvii. p. 390.

ings returned with even "aggravated violence," not only in the branches of the nerve within the range of the tumor, but also in those of the anterior crural, which was completely beyond its reach. Such being the condition of the nerve in this, as in all similar instances, the slightest pressure either from within or without would produce a paroxysm of pain, or aggravate the suffering.

Analogous facts were observed, and similar opinions entertained, by the late Mr. John Pearson, with regard to the instances which he has minutely detailed, of what, since his time, has been described by Mr. Wood and others, under the designation of painful subcutaneous tubercle. The symptoms seated in the leg were very similar, were aggravated by pregnancy, and came on without assignable cause several times in the day. It was also observed that the severity of suffering was increased not only during pregnancy, but even during menstruation; and that, in the latter months of gestation, the duration of each paroxysm was extended to an hour and a half. "Each of these attacks was accompanied with an increased redness, and a sensible elevation of the indurated part; and the paroxysms of pain were excited by every thing that accelerated or otherwise disturbed the circulation of the blood, whether applied to the induration, or affecting the general system; as, all strong exertion of the muscles, external impulse, or mental commotion." Mr. Pearson, however, in conformity with the opinions then, as now, prevalent, "that a certain degree of pressure upon a nerve will produce pain, spasm, and convulsions," considered that all these causes acted upon the principle of compression; the nerve, though surrounded by inflammatory thickening, not being in a diseased condition. In pregnancy he thought the aggravation of the symptoms was owing to distention of the vein, which, together with the nerve, was "included in the tumor. This fact was clearly demonstrated after the exfoliation of the eschar; for I then saw a portion of the vein hanging down at the superior part of the sore, and the naked nerve in contact with it." He further imagined, that during parturition her sufferings were increased by the greater quantity of blood sent to the part by the violent action of the heart and arteries, for then, "to use her own expression, she had 'all her labour pain in her legs.'" Thus the increase of pain is referred to mere venous distention at one time, to vehement action of the arterial system at another, both, however, being supposed to act upon the simple principle of pressure; for, adds Mr. Pearson, "we may, perhaps, venture to conclude, that the vein and the nerve being confined within a substance that could not easily be distended, whenever the vein became preternaturally turgid, the nerve was compressed between its parietes and the internal surface of the induration; and that, consequently, the symptoms were connected with this state of the part." The proof, however, of the distention of the vein is very unsatisfactory, and, indeed, is only offered as a probable explanation, in these terms: "it is *highly probable* that the portion of vein which passed through the tumor was unusually distended with blood at the time of the paroxysm; for upon these occasions the morbid surface became redder than common, and the tumor was sensibly elevated." Now without entering into any minute critical analysis of this sentence, it may suffice to state, that there is no proof adduced of such enlargement of the vein, and that in another case, although it was suspected that the tumor might be connected with the saphena minor, and might, consequently, "include or compress a small branch of the sciatic nerve," yet, as the cutaneous veins of the leg could not "be rendered turgid by moderate pressure, its exact situation could not be ascertained." Besides, mere distention of a venous trunk does not produce surrounding redness; redness may occur without venous enlargement, and above all, this redness, with even slight intumescence, is of constant occurrence in parts the subject of neuralgia, where there is no tumor to be influenced and no contiguous trunk of a vein to be distended. The redness noticed by all the best authorities, including Earle, Swan, and Descot, is now universally ascribed to an increased action of the arteries of the part, and is generally the consequence, rather than the cause, of the attack. I know that upon this point there has been some discrepancy of opinion, and that Mr. Earle is disposed to think it rather as the cause than consequence; but in general the weight of testimony is in favour of the opposite relation, although occasionally,

or by reflux influence, vascular excitement may at least aggravate a paroxysm. An attack of neuralgia of the face has been very frequently induced by a current of cold air, which can hardly increase the circulation in the part—by the slightest touch, as in Mr. Wardrop's case—by the pressure of the stocking, or the bed-clothes, as in one of the instances which fell within my own observation, and in one related in Mr. Wood's communication in the Edinburgh Journal; and in these it must be clear that the impression was made first upon the nerve, and that the redness was a secondary effect.

But in combating an impression so general as that which I have been considering, it may be requisite that I should examine more at large the evidence upon which it rests; and I shall do so with, I trust, all becoming deference to the opinions of my predecessors and cotemporaries, who are perhaps, after all, better able to come to right conclusions upon the subject. One of these, whose eminence as a surgeon and whose erudition have raised him far far above my censure or my praise, thus represents the state of our knowledge at the period at which he wrote:—"I do not suppose (says Mr. Pearson) that it will be necessary for me to undertake a proof in detail, that a certain degree of pressure upon a nerve will produce pain and spasms; it may be sufficient for my purpose to refer to a few of the many instances which are recorded in medical books*." Of these he has collected many examples, with which his literary habits readily supplied him, and it will be seen in the sequel how little they bear him out in the enunciation of his principle, which he evidently believed to be of universal application. His first case was one, not of extraneous pressure upon a healthy nerve, but a disease which I have already noticed amongst the causes of excitement—the hard, gritty, or cartilaginous tumor itself; and cured, not by the excision of the tumor to the exclusion of the nerve, but, as Mr. Pearson himself states, "by *removing the tumor and dividing the nerve*." Had the disease consisted merely of a tumor covering and compressing the nerve, without their being glued together by inflammation, or without the tumor being incased in the substance of the nerve, there could have been no necessity for dividing and removing a portion of the nerve, as was done, together with the tumor; the removal of the latter would have been sufficient. It appears, however, that Dr. Short thought it requisite at least to divide, or rather to excise, the portion of the nerve on which the disease was seated. "It was a hard cartilaginous substance, or ganglion, seated on a nerve which I cut asunder and took out the tumor." The pathological character of this substance identifies it as a disease of the nerve itself; for the tumors of smaller size, which are frequently found in the substance of nerves, are commonly gangliform enlargements of the nerve itself, of a gritty or cartilaginous hardness; according to the majority of the French writers, of a scirrhous character, and even essentially carcinomatous, blunting the knife with which they are cut, and producing, when cut into, a grating sound like the cutting of bone or gristle. The symptoms also, identical with those which present themselves in the painful subcutaneous tubercle, and other tumors of nerves, mark the case as one, not of simple pressure of a tumor upon a subjacent healthy nerve, but rather a morbid interstitial deposit in the nerve itself, rendering it peculiarly sensitive to the slightest impressions; so that, in Dr. Bisset's case, "on being rudely touched with a finger, or the skirts of her petticoat, the spasmodic pain was instantly excited*."

Still less does the case quoted briefly from Guattani afford even corroborative evidence of the truth of Mr. Pearson's general statement; for in that instance, if the morbid condition was really that of pressure, it is clear that the nerve must have compressed the tumor, rather than the tumor compressed the nerve. In the delineation of the parts which accompanies and illustrates that case, the popliteal nerve is distinctly represented running over the aneurismal tumor, upon which it was expanded like a girdle. The nerve was flattened by gradual extension, so as to be at least three quarters of an inch wide, and seems from the engraving to have adhered to the surface of the tumor. This circumstance renders it more than probable that inflammation had occurred in the nerve itself, and this opinion is much confirmed by the following considerations:—1st. That although there was

* Med. Facts and Obs. vol. vi. p. 101.

* Mem. of the Med. Soc. of Lond. vol. iii. p. 60.

pain near the tendo achillis, yet no violent spasms occurred in the limb until after the application of strong pressure to the tumor, with a view to the cure of the aneurism by the obliteration of the artery; and it is unnecessary to point out how likely this kind and degree of pressure was to aggravate, if not to produce, inflammation of the nerve thus expanded over the tumor, and thus subjected to such powerful compression. 2dly. That this was the only instance of popliteal aneurism in which Guattani, with all his experience, had ever met with such convulsive pains, which must have occurred, if "a certain degree of pressure upon a nerve will produce pain, spasms, and convulsions." 3dly. That Guattani assures us of the impracticability, in that instance, of tying the vessel without including in the ligature both the nerve and the vein; and, lastly, that the tumor could not even have been opened without wounding the expanded nerve*.

These were the impressions upon the mind of the author, from an examination of the parts after death; and such observation would have been little better than absurd, if the nerve had really not been agglutinated by inflammatory adhesion to the surface of the aneurism, over which it was spread. Had it remained loose and moveable, though stretched, it surely could have been pushed to one side during the operation, as the par vagum and other nerves are frequently held beyond the reach of the knife in surgical operations upon contiguous tumors or arteries, and this could not have escaped the sterling common sense of Guattani. Besides, the vein was tied by inflammation to the tumor, and it was this adhesion which rendered the application of a ligature, without including the vein, impracticable: it is probable, therefore, that the nerve also adhered to the tumor, and that this would have rendered it impossible to tie the vessel, or even to open the tumor for the purpose of securing the artery, both above and below the opening, without also including in the ligature, or the incision, the nerve itself.

[To be continued]

* Ad perficiendam vincturam necesse fuisset nervum venamque simul constringere.—Multo minus expediebat methodum aggredi aperiendi tumoris, quod hoc in casu fieri non poterat quin necessario ita expansus nervus in ipsa apertione dissecaretur.—*Guattani, in Louth's Collection*, p. 165.

A FEW OBSERVATIONS ON THE PARALYSIS PRODUCED BY LEAD; *With Cases.*

By H. M. Hughes, M.D.

[Concluded from p. 727.]

Sir George Baker, on the authority of Dr. Reynolds, mentions the case of a gentleman, who was affected with temporary paralysis of the sphincter ani after the use of Goulard's lotion to piles. Dr. Cook relates that of a gentleman who suffered from temporary loss of power of one side of the face, for which no cause could be assigned but that of sleeping for two or three nights near a door recently painted "dead white," the part affected being that which was most, if not solely, exposed to the long-continued influence of the deleterious mineral vapour. Dr. Percival has placed upon record three cases illustrative of the present subject: that of a child, which was allowed by its nurse to run about with naked feet on the warm sheets of lead in its father's workshop, and which was in consequence affected with severe colicky pains, delirium, and temporary loss of power in the left leg and arm; that of a man, accustomed to sit before the fire with his feet upon a piece of lead, whose lower extremities were the seat of slight temporary palsy; and that of a dog, which, from constantly lying in the same situation, was deprived of the use of its limbs. Many individuals, accustomed when at work to handle lead, have suffered primarily and solely from a paralytic state of the hands; but I do not recollect to have seen or heard of an instance of *partial* palsy from this source, without preceding or attendant colic, in which the lead had been taken internally. It is almost universally found, that the right hand, as that most used and exposed, is the first and most severely affected. Clutterbuck relates the case of a painter, whose right hand failed so much as to incapacitate him from grasping the brush; it was therefore transferred to the left, which was at the time in perfect possession of its power; in a short period, however, (I think about two weeks), this also was so completely enervated as to compel him altogether to resign his occupation. The same general inference

may be drawn from the particular affections to which the different workmen in lead are especially prone. Thus, from my own observation, I should say that type-founders and printers' compositors are decidedly most liable, if not solely, to palsied hands. The persons employed in the white lead factories, where large quantities of the dust may be reasonably supposed to be inhaled and swallowed, are more generally attacked with colic and constitutional symptoms; while painters appear to hold a middle rank, sometimes being first attacked with colic, at others with external paralysis. Similar conclusions may, I think, be derived from the comparative effects of constitutional and local remedies; for though I am aware that in some instances in which the health has suffered from long exposure to a poisonous atmosphere, or from continually swallowing small portions of the metal in the shape of medicine, ordinary beverage, or diet, much benefit is derived from improving the constitutional powers,—though balsam of Peru and tr. guiaci volat. were considered almost as specifics by Sydenham and Fothergill,—and though, when opposing the opinion of metastasis in colica pictonum, Van Swieten says he has cured several persons affected with palsy of the hands by internal remedies and applications to the abdomen, without doing any thing to the palsied limbs,—yet there are, I am convinced, some cases—and those not a few—in which, the general health having suffered but little, or been restored, constitutional means produce little or no effect; but local stimulants are exceedingly and immediately beneficial. Perhaps nux vomica, and its active ingredient strychnia, may be considered as an exception; but even this, acting *through* the general nervous system (when its effects are moderate), exerts its specific influence *upon* the nerves of the parts paralysed. This is, however, certainly not always the case, as I have seen it not only produce no good effect, but appear really injurious; and in other examples have known the muscles of almost all the external parts violently affected by its use, *except* those of the paralysed hands.

The case in which Dr. Pemberton first employed splints is curiously confirmatory of the local nature of the disease. He applied the board, in the first instance, to the right hand and arm alone. In two months this had perfectly regained its power; while the left, being unsupported, remained as enervated and useless as before. The splint was now applied to it, and the nervous energy returned in three months as perfectly as it had previously in the right.

On the supposition that lead had been absorbed and still existed in the body of persons affected with this species of palsy, sulphur has been recommended and used, with the intention of forming, by their combination, an insoluble, and therefore inactive, sulphuret. Though, when conjoined with other topical and constitutional remedies, I have given sulphur with apparent advantage, yet, when given alone for a fortnight, though the general health seemed benefited by its exhibition, not the slightest improvement took place in the palsied limbs.

Mercury was several years ago recommended by Dr. Clutterbuck, in consequence of its inducing a state of the system directly opposed to that which is the result of the poison of lead. I have not felt justified in producing salivation in this affection in persons whom I had usually an opportunity of seeing only once a week; but in a man who was constitutionally and rather severely influenced by mercury in alterative doses, there appeared, in consequence, little or no improvement in the power of the arms; on the contrary, blisters to the wrists, stimulating liniments, the support of splints, electricity, and the local applications of the water of the hot springs of Bath, have been universally efficacious. Many of the above statements will, I think, be confirmed by the following cases, which I have related with all possible brevity consistent with distinctness as to their leading features, but in each of which will be found, if I mistake not, some points of interest.

Case I.—Alfred Green, aged 28, of healthy appearance and clear florid complexion, and visibly cleanly in his habits, had been a painter for fourteen years, but never suffered from colic or local palsy. For the last two years had experienced weakness in the left leg; this, during the last three months, had extended to both arms, and was accompanied with a sensation of tightness, stiffness, and debility on motion, in most parts of the body; he had never been troubled with giddiness or headache;

had no pain or tenderness of the spine; recollected no accident or particular exposure to cold which could account for his present symptoms; his general health was good; bowels usually costive; tongue pallid, moist, and creamy; pulse small and frequent.

Ordered, January 19th—

Pil. Coloc. c. Pil. Galban. c. aa gr. v. omni. nocte, with Inf. Gentian. c. ℥iss.; Sodæ Carb. gr. x. bis die.

Jan. 16th.—

Inf. Gentian. c. ℥iss.; Magnes. Sulph. ℥ss.; Tr. Hyoscyami, ♏xx. ter die; with a stimulating liniment to the affected parts:

By the use of which he is gradually, though very slowly, recovering from his complaint.

Case II.—William Hobday, aged forty-three, a "musician," or, in other words, a pale, thin, sickly-looking, itinerant performer on the clarionet, feeling unwell, applied, two or three weeks before I saw him, to some quack, who gave him pills, which produced a very severe salivation, with ulceration of the lips and cheeks; for this he was successfully treated with saline aperients, tonics, with the mineral acids, gargles, &c.; but as I observed a want of power in the right arm and wrist, I inquired the cause and duration of the complaint, and found that seven years previously he had been a painter, and had before that time been more than once attacked with colica pictonum and partial palsy; also, that though when in good health he enjoyed the perfect power of the part, whenever he suffered constitutionally, the "right hand dropped." On this occasion, as before, in proportion as the general strength returned, the local affection decreased, and at length it altogether disappeared.

Case III.—Samuel Dunnington, aged 39, a slight, pallid, delicate-looking man, employed for the last sixteen years as a type-founder, had never suffered from colic, or previously from palsy, but observed, four days ago, that the ring and little fingers of the right hand were powerless. He made no other complaint excepting of slight pains in the shoulder and arm, but his bowels were constipated, and his countenance indicated sluggish hepatic circulation. On inquiry it appeared that his particular department was to rub, for the purpose of smoothening the recently-cast type, and that for this purpose he used the fore and middle fingers alone. If the metal acted as a direct local sedative, these, therefore, appeared the parts that should have been affected by it; but I found that these two fingers were constantly guarded from the small rough projecting portions of the composition by a thick and strong piece of leather, and that the other two hung loose, and came, therefore, in frequent contact with powder and abraded particles removed by friction.

October 10th.—After a free action upon the bowels, he was ordered the

Peruvian Balsam, in the form of mixture, and a blister to the wrist.

17th.—Fingers stronger, and health improved. Ordered

Pulv. Nucis Vomic. gr. iij. omni nocte, and a stimulating turpentine liniment.

24th.—No spasm or twitches from the nux vomica, but fingers increasing in power.—Pergat.

He had not the specific effects of strychnia produced, but gradually, though, as is usual in these cases, slowly, regained the use of his fingers.

Here is what I consider to be a very singular exemplification of the local sedative operation of lead, though perhaps by some it may be regarded simply as a coincidence; if this be true, it is certainly a very curious one.

Case IV.—Joseph Spearman, aged 39, pale in countenance, sickly in aspect, and apparently not very cleanly in habits, had been a painter for eighteen years; had been attacked with colic two or three times, and was two years ago under my care for palsied hands, of which he was cured rather quickly by blisters to the wrist, and general stimulants. His present affection was preceded by colic, and was extremely well marked, both hands being badly, but the right the more severely, paralysed. After some aperient medicine, he was ordered

Sulph. Subl. ʒj. bis, terve die.

But though in a fortnight his health was good, there was not the slightest perceptible change in the hands, and he was anxious to return to the plan formerly so efficacious. I thought myself justified in withholding it no longer; he was therefore ordered

Blisters to the wrists, to support his hands on splints, and to take a mixture of Gentian and Ammonia.

In a week's time he said his health was as good as it ever was in his life; and, indeed, in each succeeding week much progress was made as to the power of the hands, till three grains of powdered nux vomica were directed to be sprinkled every night on the blistered surface of one side. After using it for a few days, he said that though no spasmodic twitchings have occurred, the hand and wrist to which it was applied became much weaker; an observation which I was enabled to verify by experiment: it was therefore discontinued. His mixture was occasionally altered for one of balsam of Peru, and he latterly employed a liniment of turpentine, mustard, and ammonia, with excellent effect. In this man I observed, what, in cases of long standing, I presume uniformly occurs—viz. that when regaining the power of the parts, he could extend either the fingers or the wrist separately, but not at one and the same time; and that both actions were performed by the extensor digitorum communis. The advantage thus gained by the muscle is too obvious to require explanation. Does it shew that though the nervous energy had returned, the muscles, wasted by long inaction, had not yet regained their accustomed vigour? The next two cases are given from recollection, as of them I took no notes.

Case V.— ——, aged about 35, a tall, thin, but healthy-looking man, had been (I think) a printer's compositor for many years; had never suffered from colic, or previously from palsy, but now had a paralytic *right* hand and wrist. He was ordered simply an occasional aperient, a blister to the arm, on which was to be sprinkled, every night, pulv. nucis vomicæ, gr. iij. The blister was repeated weekly, and the powder slightly increased. Spasmodic twitches were frequent in the affected limb, of which he completely, and rather quickly, regained the use.

Case VI. ——, aged about 45, for many years had been a printer's compositor, of not unhealthy aspect, had never been afflicted with colic, but once before had a slight paralytic affection of the hands. Some weeks previously to coming to me, he felt a weakness of the right hand and fingers, which increased so much as to incapacitate him to grasp the type. The left hand being very little, if at all, enervated, he picked up the letters with it, and transferred the "frame" to the right; but, in a short space of time, the left also became so powerless as to oblige him to resign his work. When first seen, the right hand was very severely palsied, the left in a slighter degree: his general health was tolerably good, though his bowels were irregular.

Ordered splints; Sulph. Sublimat. 3ss. ter die ex haust.; Bals. Peruv. &c.

He improved considerably under this plan, which, with slight modification and the addition of a stimulating liniment, was continued till he was able to return to his work, which, however, did not take place till after the expiration of a considerable time.

The two succeeding cases occurred in the clinical ward of Guy's Hospital, and were there seen by me during the last and the present session.

Case VII.—Thomas Sadler, aged 42, a painter for 28 years, but never suffered from his business till eight years ago, when he had paralysis of the hands, of which he was cured in eleven weeks, by the water of the hot spring at Bath. Since this, he has been twice attacked with colic. Three months ago he observed that his hands were again becoming weak. This weakness increased till his admission into the hospital; when, in addition to the local palsy, he complained of severe abdominal pain, increased on pressure; the bowels were confined; tongue loaded, and moist; pulse 64. He was treated as usual for the abdominal affection, with the addition of cupping and alterative doses of blue pill, &c. by which he was (I believe) unintentionally, but rather severely, salivated for a week. He then took a mixture containing Peruvian balsam, used splinters, &c. but by neither was the paralysis much, if at all, affected; he was therefore ordered to be electrified. This was done with benefit for two days; but as he was rather frightened at the electric effect, he left the hospital for Bath, where he had been previously cured.

Case VIII.—Thomas Keen, aged 36, a painter from youth, but had (I think)

never been attacked with colic. He was, three weeks previously, obliged to leave his work in consequence of weakness of the hands. He also suffered from pain of the shoulders, arms, and back; his tongue was loaded; his bowels open from medicine; pulse 72; general health good.

Nov. 1st, ordered Tr. Guiaci Volat. ℥ss. ter die. 28th, Pergat. To be electrified.

December 10th.—But little improvement.

Mist. Balsam. Peruvian. ter die. The hands to be supported by splints.

22d.—Little alteration. Strychnia, gr. ¼ ter die, was then ordered, and continued, with some variation of dose, to January 15th, when a blister was applied to the left hand, and strychniæ gr. ¼, sprinkled upon the blistered surface.

16th.—So much spasmodic twitching of the muscles as to prevent sleep.

Rep. Strychnia altern. auroris.

19th.—Last evening attacked with violent tetanic spasm of the muscles in the throat, neck, abdomen, back, and lower extremities; but the forearms and hands were not affected in the slightest degree. The dressings were removed, and a poultice, sprinkled with a few drops of tinct. opii, applied with advantage. Quiescent.

24th.—Very slowly progressing; 1-16th of a grain of strychnia was now introduced into the back of the hands alternately, by means of a small incision, with the effect of inducing twitches in the parts to which it was applied, but with little improvement in the disease.

February 4th.—Thirst.

Balsam. Peruvian. ter die.

10th.—Very trifling improvement. The electric aura, with a few shocks, was now administered by the clinical clerk (Mr. Bird), with decided advantage, and he was discharged on the 24th, very considerably relieved.

A glance at the preceding briefly related cases will shew, not only that (as in No. 1.) lead produces general muscular debility—a fact that must be familiar to most persons accustomed to hospital practice, and that many who suffer from external local paralysis have not previously been attacked with colica pictonum (as in Nos. 3, 5, 6, 7, and 8), but also that some individuals whose hands have solely come in contact with the poison, have been affected in those alone (as Nos. 3, 5, and 6.) It will also appear from No. 2, that when the hands suffered from this species of palsy, though many years have elapsed since the apparently perfect restoration, the local affection or paralytic weakness is liable to return, under severe disorder of the system at large. This I consider interesting, as shewing the cause of the secondary or subsequent attacks being more tardy of cure than the primary, and as appearing to prove that, at least in this one instance, a permanent impression had been made upon the nerves of the limb. It will also be seen from almost all, that topical applications of a stimulating kind, as, indeed, has been before observed, are most effectual in removing the *local* complaint.

From all that has been written, perhaps I may be allowed to suggest the following deductions:—

1. That different individuals, and the same individuals at different times, vary extremely in their susceptibility of the operation of lead.

2. That this mineral, when taken in small repeated doses, is capable of producing general paralytic weakness.

3. That from its action, true paralysis of the muscles occurs in other parts beside the upper extremities.

4. That the colon, or other part of the intestinal tube, is especially liable to be affected by it.

5. That this affection probably depends on debility of the muscular coat.

6. That it is doubtful whether the pains in colica pictonum are attributable to spasm, or to spasm only.

7. That the muscles of the hands are, *perhaps*, particularly obnoxious to its deleterious influence.

8. That it frequently produces palsy of the muscles moving the part to which it is applied; and from this cause the hands are more subject to palsy, occasioned by it, than other parts.

9. That its operation appears to be that of a sedative, whether general or local in its action.

10. That the local paralysis is most effectually removed by topical stimulants, if the general health has not materially suffered.

13, Wellington-Street,
London-Bridge, Feb. 6, 1835.

ON A NEW SYSTEM OF WEIGHTS AND MEASURES FOR THE PHARMACOPŒIA.

To the Editor of the Medical Gazette.

Sir,

As it is understood that the College of Physicians have in preparation another edition of their Pharmacopœia, and as the practice of medicine in this country is likely, in other respects, to be shortly made a subject of legislative regulation, it seems to be a suitable season for inviting attention to any points in which there are useful alterations to be made, and requiring the sanction of authority. The system of weights and measures, at present employed in medicine, is very obviously one of these; and the legislature has of late directed its attention to this subject in general, and actually introduced, by force of law, several considerable innovations, whose utility will no doubt in due time be fully appreciated. There can be little doubt that should the College be desirous of taking the opportunity to introduce an improved system into the medical department, they would find no difficulty in obtaining the sanction of the higher powers. Nor do they want a precedent for such a step, as they have already, and recently, done a similar thing in the instance of our fluid measures. I am not aware whether any thing of this kind is actually in contemplation; not improbably this is the case. But as the subject is really one of much interest and practical importance, I hope it will not be thought unbecoming, even in a country practitioner, to offer a few suggestions respecting it.

At present we use two distinct sets of weights—not to say three; for our system of fluid measures, which is regulated by weight, involves the recognition of a third: thus we have the troy ounce, of 480 grains; the avoirdupois ounce, of 437·5 grains; and the fluid ounce measure, containing 454·5 grains of distilled water. This is not only exceedingly inelegant and clumsy—it is not only troublesome and vexatious—but it almost inevitably leads to confusion and mistake. This is too obvious to require proof or illustration: every practitioner, every chemist, feels it for himself. The inconvenience of the present system is so great, that we cannot for a moment suppose that any difficulty would be encountered in obtaining the practical concurrence of the profession in any judicious alterations that might be introduced by proper authority. Nor is it, I think, difficult to determine the principle on which those alterations should be made.

The late acts of the legislature have established the avoirdupois pound as the basis of one system both of weights and measures, for all general commercial purposes. The avoirdupois weight is further recommended by its antiquity, as its ounce is considered to be as nearly as possible identical with the ancient Roman ounce. I suppose, therefore, that there can be no doubt that if it should be decided to abandon one of our two present systems of weights, that one must be the troy. Indeed, the sapient maxim, which tells us to go to the mountain when we find that the mountain will not come to us, requires this. The authorities of our profession are able to substitute the avoirdupois for the troy in medical practice, but they have no power to induce the commercial dealers to do the reverse.

Assuming, then, that we must retain the avoirdupois pound and ounce, it is evident that the desideratum will be avoirdupois grains; and the only question is, into how many ought the ounce to be divided? I shall not pretend to decide this question with confidence; but I beg leave to propose what has appeared to me, on reflection, to be most advisable;—this is, to divide the ounce into 400 grains, instead of 437·5, which it now contains. We shall thus go with the commercial dealer as low as the quarter of the ounce (which I believe as low a weight as is much used in commerce) on the principle of halving and quartering, and then, for our own and scientific purposes, we shall begin with decimals. Taking the ¼ ounce to be units, the grains would be in decimals; thus 3·25 would give 3 quarters and 25 grains. It might be proposed to divide the ounce into 500 grains; but this, I think, would be less convenient, because the number 500 can be only twice divided by 2, whereas 400 can be four times so divided; and this is not more than is required to correspond with the present dram avoirdupois, and therefore not more than we may presume to be found convenient for commercial purposes. Our plan would give the dram avoirdupois the lowest commercial

weight, equal to 25 grains. Retaining the present relative value of our dram and ounce, the former would of course be 50 grains; and it might perhaps be well to let our scruple pass for 25 grains; but this is immaterial. Our enlarged avoirdupois, or rather our new apothecaries' weight, would then stand thus:

Pound.		Ounces.		Quarters.		Drachms.		Grains.
1	=	16	=	64	=	128	=	6400
		1	=	4	=	8	=	400
				1	=	2	=	100
						1	=	50

It is of course in some measure objectionable to give, as we here do, a new value to the old denominations of drachms and grains; but there is no alternative but that of introducing names absolutely new. The change in value here proposed is so slight, that it does not appear that any practical evil can result from retaining the old names. The relative value of the new grain to the troy grain will be as 437·5 to 400, or nearly as 12 to 11; which I think is too inconsiderable a difference to produce any injurious mistakes, even in the administration of the strongest medicines.

The case of our fluid measures is very simple: it is but to make our fluid ounce measure such as will contain an avoirdupois ounce of distilled water. The fluid ounce might, as now, be divided into 8 fluid drachms. As regards the minims, which ought, for practical purposes, to represent, as nearly as possible, natural drops, or guttæ, and that perhaps rather of spirituous than of aqueous liquors, it might be proper to ascertain what numerical relation between them and the fluid drachm would be most suitable to this purpose, and to assign their value accordingly.

I am, sir,
Your obedient servant,
T. F. Barham, M.B.

Exeter, Feb. 15, 1835.

EXTIRPATION OF FUNGOUS TUMORS OF THE ANTRUM.

To the Editor of the Medical Gazette

Sir,

In a clinical lecture on Diseases of the Maxillary Antrum, by Sir B. C. Brodie, which I have lately seen in the 366th number of the Medical Gazette, it appears (p. 351) that that eminent surgeon disapproves of the practice recommended by Desault, of extirpating fungous tumors of the antrum, and endeavouring, by the free use of the actual cautery, to prevent their regeneration; and he doubts the reality, or at least the permaneney, of the cure, in a case reported by Desault.

This opinion seems to be the result of one, and only one, unsuccessful case in Sir Benjamin's own practice, where, however, the actual cautery was not used immediately on the removal of the fungus, but only after the failure of "blue lint," and other escharotic applications.

I agree entirely with Sir Benjamin as to the fatal tendency of this disease when it has burst the boundaries of the antrum and cheek; but as he seems to consider it uncontrollable before this period, and has not pointed out any means of subduing it even at an early stage, I consider it of some consequenee to decide how far it is warrantable to attempt a eure under such circumstanees.

With reference to this point, therefore, I take the liberty of referring such of your readers as may be interested in the subject to a case which I have reported in the seeond volume of the Glasgow Medical Journal (p. 74), where a tumor of this kind was extirpated after it had produced eomplete absorption of the bone, and where the actual cautery was freely applied to the whole of the diseased surface.

This patient died of pectoral inflammation *five years and a half afterwards*, when she had just recovered from the operation of removing nearly the whole of the *lower* jaw. On a minute examination of the antrum, whieh I believe is still in the possession of my friend, Professor Burns, the former disease was found to have been permanently cured by the operation.

I shall not occupy more space in detailing the particulars of this case, as it is already published; but I shall feel indebted to you, or any of your correspondents, who will refer me to other published cases, or communicate any of their own, together with the mode of treatment which may have led to a permanent cure.

In the meantime, I confess that in such a case as that above noticed, even in the face of an authority so deservedly high as that of Sir B. C. Brodie, I should scarcely be disposed to relinquish the prospect of a similar result by leaving the patient to his fate.

I am, sir,
Your obedient servant,
A. D. Anderson, M.D.
M.R.C.S.

159, St. Vincent-Street, Glasgow,
Feb. 12, 1835.

EXCISION OF NERVES EXPOSED IN AMPUTATION.

To the Editor of the Medical Gazette.

Sir,

Dr. Ley, in one of his late interesting communications on the Pathology of the Nerves, has stated the opinions and practice of Mr. Langstaff and Mr. Swan in favour of the occasional excision of an additional portion of the principal nerves which have been exposed in amputation, in order to prevent the occurrence of any painful affection of the stump (p. 650.)

Whether Baron Larrey has recommended this practice in any of his works I cannot tell, but I saw him adopt it in a case of amputation of the arm, which I witnessed at the Hôpital de la Garde Royale, in December 1828. The patient was a soldier. The case was, I believe, scrofulous disease of the elbow-joint. There was considerable emaciation both of the body and of the diseased member. After the amputation, the operator drew out first the median, and then the other principal nerves, and cut off a portion about an inch in length from each. The reason assigned by the Baron was, that he wished to prevent adhesion of the nerves to the cicatrix, which, when it was allowed to take place, frequently caused an irritable stump.

Yours respectfully,
John Mann.

173, Aldersgate-Street,
Feb. 19, 1835.

SOME OBSERVATIONS ON PHLEBOLITES *.

By Dr. John Reid.

The accompanying preparation is a portion of one of the broad ligaments of the uterus, in the veins of which are observed a number of small, rounded, osseous-looking bodies, which have received the name of phlebolites. They are described by Beclard, in his Anatomie Générale, under the chapter on Veins, and by Jules Cloquet, in his Pathologie Chirurgicale; but I am not aware of their having been noticed by any English author †, though they must have occasionally been seen by those much engaged in dissections. Their presence does not appear to be attended by any bad effects, and they consequently possess little practical importance; but the nature and cause of their formation may, ere long, become an object of considerable interest in physiology, as serving to strengthen or confirm some of the doctrines concerning the living fluids of the body. They cannot be considered as of rare occurrence. I have now seen them in five instances, and four of these have been within the last twelve months. In three of these they were found in the uterine veins; in one (a male) in the vesical veins; and in the present case both in the vesical and uterine. They varied in size, from that of a millet-seed to that of a large pea. They varied in number, from two to more than a dozen. In all the cases in which I have examined them, they seemed to be placed loose in dilatations of the veins, allowing sufficient space for the blood to pass between them and the coats of the vein. Some of these veins were of very small size in the undilated portions, and required a careful examination to be convinced that they were placed in veins; while others were of sufficient size to render this almost apparent at the first glance. The subjects in which I found them were all advanced beyond the middle period of life.

Beclard and Cloquet describe them

* Edinburgh Medical and Surgical Journal.

† They have been well described by Dr. Robert Lee, in his article on the Pathology of the Veins, in the *Cyclopædia of Practical Medicine*, and in the pages of this journal.—Ed. Gaz.

as being most frequently inclosed in layers of fibrinous matter, or coagulated blood; but in all, except in the present case, I have found them without any covering whatever, and in nearly all of them of a bony hardness throughout.

In the preparation before you a very large one may be observed with a clot of blood. Several smaller ones were also observed enveloped in coagulated blood. The spermatic veins in this case, in the branches of which these were deposited, were much enlarged.

According to Cloquet and Beclard, they have been also found in the hæmorrhoidal veins, in the spermatic veins of the male, in the saphenæ veins, and twice in the *vena cava inferior*. In one of the cases described and delineated by Cloquet, he states that the smaller ones were formed of a little soft clot of blood; that those of a larger size contained in the centre a nucleus of white fibrinous matter; that the largest had in their centre an osseous-looking nucleus, upon which the white fibrinous matter was arranged in concentric layers; the internal very hard, the others becoming gradually softer as they approached the surface. He also gives a drawing of a round fibrinous mass taken from the *vena cava inferior*, containing an ossific-looking matter in the centre, from which a number of rays of the same substance passed through the fibrinous matter towards the circumference. Another specimen similar to this was seen by Cloquet in Soemmering's museum, and was said to have been taken from the *vena cava inferior* of a child.

I am not aware that the chemical composition of these bodies has been accurately ascertained. Cloquet speaks of them as composed of phosphate of lime, but he does not state that they were analyzed. Mr. Kemp had the kindness to analyze two of them taken from different subjects. He has not yet been able to obtain accurate results; but he states that he is certain that both were principally composed of phosphate of lime, of carbonate of lime, and of animal matter, and that it appeared to him that these earthy salts and animal matter were nearly in the proportions that exist in the bones. He has promised to make a more accurate analysis; and we will then see how far they differ from, or agree with, the osseous texture in their chemical composition. It may also be stated, that the animal matter seemed composed in a great part of gelatin; but this would require farther researches.

It becomes an interesting subject of inquiry, whether these bodies are formed by a deposition of the earthy salts contained in the blood, mixed with some of the animal matter, or whether this depends upon some vital action in the fluids corresponding to the formation of the osseous texture. Neither Beclard nor Cloquet give any opinion upon the cause of their formation. The fact of their being only found in the depending veins, where the flow of blood is retarded, and the improbability of the formation of any osseous texture in the interior of these vessels, strongly favour the notion of their being merely depositions from the blood, as urinary calculi are from the urine; while the nature of their formation, the gradual conversion of the fibrinous layers into osseous, the radiation of the ossific matter through the fibrinous clots, and their chemical composition (if their similarity to bone is confirmed), must strongly incline us to ascribe their origin to something more than mere physical or chemical laws. Additional observations, by furnishing more extensive data, may enable us to come to more decisive conclusions on this interesting question.

MEDICAL GAZETTE.

Saturday, February 28, 1835.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

INTERNAL REFORM IN THE COLLEGE OF PHYSICIANS.

An idea has gone abroad, partly, we believe, in consequence of our silence last week, that the measures of reform which have for some time been under consideration in the College of Physicians, have been abandoned: this rumour is unfounded. The various important changes which we formerly announced, have been carried, and the delay which has since occurred is occasioned entirely by the time necessary to throw the resolutions into the form of

statutes. When thus prepared, they will have to be submitted, in their new form, to the College; and we entertain no doubt of their adoption.

The circumstance which misled some, who ought to have been better informed, into the idea that the proposed changes had been abandoned, was the smallness of the majority in their favour; but the fact is, that the minority, who tried to get rid of the proposals of the Committee, did so, not because they thought them too liberal, but because they thought them not liberal enough. Those who voted on this side, preconcerted their plans so as to be all present, while many on the other side, not aware of their intentions, were absent; but as this will not occur again, there can be no reasonable doubt of a considerable majority agreeing to the proposals of the Committee as soon as they are sent up to them in the form of statutes. The measures in question, though not precisely what we have contended for, are nevertheless liberal beyond any thing which has ever before emanated from the College, and but a short time ago would have been received with general satisfaction. It is with this, however, as with all similar questions—the longer the settling of it is postponed, the more does the demand accumulate, and the larger is the share of concession required.

On the effects which are likely to follow this new construction of the College (for it amounts to nothing less), we have already expressed our opinion; and there cannot, perhaps, be a better tribute to our impartiality than this—that while some silly journalists vent their petty spleen by calling us the organ of the College, we know that many in that respectable but somewhat aged corporation hold that we are too much tainted with radical propensities. We cannot, however, like some of our flippant contemporaries, be the slaves of every change, and vary with each turning of the wind; and while we shall never be led to deny to the College of Physicians its proper rank among the medical institutions of the country, and to its Fellows the humble meed of our commendation, as being for the most part accomplished gentlemen, and learned as well skilful physicians, so, on the other hand, no veneration for antiquity, nor for the *prestige* of distinguished names, shall prevent us from using our utmost efforts to promote the cause of those physicians who, we think, by an unjust spirit of monopoly, and by a short-sighted policy, have been excluded from all participation in the benefits of incorporation; and who, while they might have been secured as allies, have been driven, in self-defence, to become opponents.

As to the permanency or stability of the proposed changes, that will depend upon the result of yet more important questions. If the present administration should be able to weather the storms which gather so rapidly around it, or if it be succeeded by a Whig administration, such as that of Earl Grey or Lord Melbourne, the College of Physicians will certainly maintain its ground, and extend its influence, under the operation of those liberal measures which we have detailed in some recent numbers. But if the changes in the political world bring a radical cabinet into power, then most assuredly the College of Physicians will be swept away altogether, and all the medical corporations, as well as schools, be sacrificed to the needy shareholders of the establishment in Gower-Street.

Should this happen, we predict that a more aristocratic and exclusive institution than any we have yet seen in medicine, would immediately follow. The most influential and distinguished members of the profession would unite to form an association, which would be in medicine what Almack's is in the world of

fashion, or the Royal Academy in the fine arts. Composed of the *élites*, and limited to men of superior attainments, such an institution (which, we repeat, we are confident would be established) would render nugatory all the levelling of the radicals.

It is true, we are not yet quite reduced so far; but, supposing for a moment that the "one Faculty" were established by law, it is evident that to belong to such a congregation of all sorts and denominations could never confer distinction; while, to be admitted into a body known to be select would become an object of ambition, and would give the individual a certain rank in public estimation. The legislator may control acts and alter forms, but he cannot fix by statute the subtile influence of opinion.

SUPPLEMENTARY NOTICE OF DUPUYTREN.

Our personal memoir of this illustrious man (see our last number) would be incomplete, were we not to give the following *addenda*.

Postmortem Examination of the Body.

In conformity with the last wishes of M. Dupuytren, his body was examined thirty-two hours after death, by MM. Rufz and Teissier, *internes* of the Hôtel Dieu, in presence of MM. Broussais, Cruveilhier, Husson, and Bouillaud, the latter of whom drew up a most elaborate *procès-verbal* of the autopsy. We shall select a few of the more remarkable appearances.

Thorax.—The right side of the chest was found, by measurement, to be somewhat more capacious than the left; and upon plunging a trocar into that side, about four pints of a milky-looking and muddy serum issued forth. On examining the interior of the chest, the lower and middle lobes of the right lung appeared to have been much compressed backwards and upwards by the effusion. The tissue of the lower lobe was condensed, and quite destitute of air; it sunk in water. In short, the only portion of sound lung on the right side was about the summit of the upper lobe. In the left side of the chest there was about half a pint of serum, slightly tinged with blood; but the lung of that side, with the exception of a little infiltration, was in a sufficiently normal state. The pericardium contained only a few drops of serous fluid. The heart was robust, visibly hypertrophied, but preserving its natural proportions; there was abundance of fat upon it, but the muscular tissue of the organ was flabby, brownish, and apparently fast approaching a state of decomposition. The ventricles rather capacious; all the valves perfectly sound.

Abdomen.—The stomach was large and distended, as were the intestines generally, with gas. The gastric mucous membrane was of a uniform red colour,—more deep, however, in the vicinity of the spleen,—soft, and easily torn. The œsophagus lined with a false membrane, *diphthéritique*, of no great consistence. The liver somewhat more voluminous than natural, its tissue rather flabby and yielding; the spleen in much the same state. Gravelly matter was found in the kidneys, which organs had also undergone some morbid changes, chiefly of enlargement and softening. The bladder was in a healthy condition.

Head.—The various diameters and other measurements of the head were exactly taken; but the only thing worth noticing on the subject, is the fact that the right and left cavities of the cranium were not symmetrical, the left being, on the whole, more ample than the right. A cast was taken of the appearance of the cerebrum when the top of the cranium was removed, although the convolutions presented nothing very striking. The weight of the cerebrum, cerebellum, annular protuberance, and medulla oblongata, taken together, was 2 pounds 14 ounces; the cerebellum alone weighed 4 ounces 5 grs. In the right lateral ventricle there was observed the vestige of some former lesion; it was a sort of yellowish cicatrice, about an inch long and half an inch wide: its depth, however, was very slight, and the substance of the brain beneath it was quite sound. A little deposit of blood was observed on the centre of the right optic thalamus. "Apoplectic excavations" were found in both the corpora striata. Nothing particularly worthy of observation was met with in the vessels of the brain.

His Contributions to Medical Science.

The labours and researches of M.

Dupuytren were principally employed about anatomy (natural and morbid), and surgery. But as our space is limited, we shall confine ourselves to a rapid view of his surgical achievements. He seems to have enriched the art of surgery in every department. In the treatment of phlegmonous erysipelas, he is said to have been the first who applied blisters; and it was he who explained the nature of inflammations with strangulated bases, as in furunculus and anthrax,—where he devised the plan of large and deep incisions, in order to arrest their progress. Burns he divided into six species or degrees, and assigned an appropriate treatment for each. He it was who first tried caustic in sores affected with hospital gangrene; who employed epispastics for the radical cure of hydrocele; who modified successfully Foubert's method of treating fistula lachrymalis; who struck out a new process for the cure of ranula (*grenouillette*); and it was he who originated certain important precepts for the forcible and successful removal of sarcomatous polypi of the nose and maxillary sinus. From him we learned the advantages of excision in preference to ligature, in treating uterine polypi; and he it was who first performed the operation of complete amputation of the neck of the uterus, when affected with scirrhus, or cancer. He it was who first recommended the semicircular incision in removing carcinomatous upper lip, leaving it to nature to supply the deformity in her own best fashion. Who was more clever than he in diverting the patient's attention during the attempt to reduce luxations? For cataract, his experiments for ascertaining the comparative merits of extraction, keratonyxis, and depression, are all well known; and how he preferred the latter, and invented a needle for the purpose, in many respects superior to that of Scarpa.

There are also numerous other operations for which the medical world is indebted to the genius of Dupuytren—such as amputation of the lower jaw, and new processes for removing limbs at their articulations—at the elbow, for example, the hip-joint, and the knee. Among his improvements we may notice the rejection of the ligature of reserve *(d'attente)* in the treatment of aneurism; and among his inventions, the instrument which he substituted for the tourniquet of Petit, and that which he contrived for cutting the intestine without danger (the *Enterotome*) in artificial anus. To him we also stand indebted for the rules he has laid down for the treatment of prolapsed rectum by incision; for his practical suggestions on the nature of callus; and for the inclined plane which he devised for the management of old fractures. His ingenious method of bandaging in fractures of the fibula and radius are well known. For the treatment of recto-vesical and recto-vaginal fistulæ by the actual cautery, he has been celebrated; he has removed with success a portion of the sternum and contiguous cartilages affected with caries; and who has not heard of his bold and successful cure of wryneck by division of the sterno-cleido-mastoid muscle,—a plan which has since been followed by M. Amusat with complete success? Nor should we omit to add to this hasty list his admirable investigations, in conjunction with M. Therard, relative to the asphyxia produced by sulphuretted hydrogen and nitrogen gases*. In short, it may be said, that perhaps there has never been any one man from whom the practice of surgery has derived so many and so great benefits.

His fame as a pathologist is only obscured by his superior lustre as a surgeon: yet it should not be forgotten that he was one of the founders of pathological science in France. It is true that Bayle, and Laennec, and Broussais, and Andral, have opened mines of wealth in this department; but Dupuytren was *among* the first, if not *the* first, to give an impulse to their labours.

COLLEGE OF PHYSICIANS.

SIR H. HALFORD, BART. IN THE CHAIR.

THE second meeting for the season took place on Monday last. Two papers were read; the first of which, by Dr. Hope, we subjoin.

On the Connexion of Apoplexy and Palsy with Organic Disease of the Heart. By DR. HOPE.

Apoplexy and palsy—the one causing sudden death, the other often miserably

* We do not pledge ourselves for the completeness nor the correctness of this list of M. Dupuytren's contributions to medicine and surgery: we have merely copied it from an article, by M. Lazaras, in a recent number of the *Gazette des Hôpitaux*.—ED. GAZ.

crippling both the body and the mind—are maladies which have always been regarded with peculiar dread by the patient, and have excited a corresponding degree of attention on the part of the medical faculty. It is therefore surprising that their most frequent and certain cause should have remained unknown until within a very recent date.

The modern researches of Richerand, Bertin, Andral, and others, have completely demonstrated the connexion between apoplexy and thickening of the left ventricle of the heart; and Richerand has, with great truth, pronounced this thickening, or hypertrophy, to constitute "a predisposition more allied to apoplexy than what is denominated the apoplectic constitution;" that is, a robust, square frame, with a short neck and full habit. "It may even be added, (says Bertin), that, in general, the individuals who present the apoplectic constitution described by authors, are at the same time remarkable for the size and thickness of their hearts."—(P. 351.)

Notwithstanding these remarks, it appears to me that the *full* extent of the connexion between the diseases of the head and those of the heart—in reference, not to hypertrophy alone, but also to dilatation and disease of the valves—is not even yet duly estimated, either by the writers in question, or, still less, by the general body of the profession.

This connexion having arrested my attention many years ago, while conducting researches on diseases of the heart in general, I determined to make it the subject of a separate series of investigations; and I have availed myself of my opportunities as physician to a very large institution (and one containing wards specifically for old apoplectic and paralytic patients), to carry this determination into effect.

From the 12th December, 1832, to the same date in 1834, forty-two patients who had died of apoplexy, or epilepsy, were examined *post-mortem*, in the St. Marylebone Infirmary. The following are the results, according to the journals of Mr. Hutchinson, the able resident surgeon of the institution:—

Of the forty-two cases, four died of apoplexy and two of epilepsy, between birth and 40; nine died of apoplexy and one of epilepsy, between 40 and 50; six died of apoplexy, between 50 and 60; seven between 60 and 70; eleven between 70 and 80; one between 80 and 90; and one between 90 and 100.

Hence it would appear that the periods of life during which fatal apoplexy is most prevalent, are between 40 and 50, and between 70 and 80.

We have now to examine in what proportion of these cases disease of the heart existed.

In four of the forty-two, the heart was found "quite healthy." In eight cases more, no remark is made in the journals as to its condition; it may therefore be presumed to have been healthy. This affords a total of twelve cases out of forty-two, in which the heart was sound: in the remaining thirty it was diseased.

Thus, taking all the ages collectively, disease of the heart accompanied fatal apoplexy in no less than thirty cases out of forty-two—*i. e.* in five out of seven.

We will now examine at which of the above periods of life disease of the heart, in connexion with fatal apoplexy, was most prevalent.

Between *birth and forty*, disease of the heart was found in two cases only out of seven. Between *forty and fifty*, it occurred in eight out of nine!—a remarkable increase. Between *fifty and sixty*, it occurred in four out of six—a decrease. Between *sixty and seventy*, it occurred in three out of seven—a further decrease; and between *seventy and eighty*, it occurred in ten out of eleven!—another remarkable increase.

It would thus appear that the periods of life during which fatal apoplexy is most prevalent, are precisely those in which concomitant disease of the heart is of most frequent occurrence—namely, between *forty and fifty* and between *seventy and eighty*.

It was stated above, that, taking all ages together, disease of the heart occurred in five cases out of seven of fatal apoplexy. Now *this* proportion is, I apprehend, *much* greater than is generally imagined or believed; and it sufficiently evinces the importance, in medical practice, of carefully studying how far the state of the heart and that of the brain may be allied, as cause and effect.

But in the two apoplectic periods of life (if I may be allowed the expression), between 40 and 50 and between 70 and 80, the proportion is much greater; for instead of being five cases out of seven, it is in the proportion of nine out of

ten. Hence it is desirable to direct our attention, in the treatment of apoplexy, to these two periods more especially; and in order to do it with effect, it is necessary to investigate the causes why fatal apoplexy occurs in connexion with disease of the heart, during these periods in particular.

Now, on examining the cases occurring between the ages of 70 and 80, seven out of ten present ossification of the heart. On the other hand, between 40 and 50, disease of the *muscular* structure prevailed, while ossification was comparatively rare.

Hence it appears deducible, as a generalization, that it is disease of the *muscular* structure more especially, which causes apoplexy in the earlier period of its prevalence; and it is mainly ossification which occasions it in the more advanced period.

It will now be asked, *why* disease of the muscular structure occasions fatal apoplexy between the ages of 40 and 50 *in particular?* To this question, the *history* of disease of the muscular structure affords a reply. Such disease is not, in general, expeditiously fatal. It usually commences insidiously, and steals on gradually—often subsisting from ten to twenty years, or more, before it produces its fatal effects. If, then, we consider that it is principally between the ages of 25 and 40 that the *causes* of disease of the muscular structure are brought into operation; if we reflect that this is the period when intellectual exertions are the most intense and sustained—when the exciting and depressing passions have the strongest and most permanent hold—when the physical system is subject to the greatest variety and severity, and continuity of efforts; all of which causes, by preternaturally stimulating the heart, predispose it to disease—we shall not be surprised that the seeds of destruction, sown during this period, should yield their fruits during the subsequent period—namely, between 40 and 50.

It will next be asked, why ossification causes fatal apoplexy between the ages of 70 and 80 in particular?

It is not until towards the age of 60 that the ossific tendency which characterizes old age comes very decidedly into operation. Between the ages of 60 and 70 it makes silent progress, and between 70 and 80 it produces its fatal effects; these effects being, no doubt, assisted by the *general* failure of the powers of circulation, which accompanies the progress of decay.

I have hitherto spoken of apoplexy alone; but what has been stated applies equally to palsy, when connected with derangements of the circulation through the brain; for, under these circumstances, it is only a younger brother of the same family. In many of the forty-two cases above quoted, *several* apoplectic fits had preceded the fatal attack, and, in a large proportion, the fits had been followed once or more by palsy, either transient or permanent.

Many presented vestiges in the brain of *several* apoplectic clots, in progressive states of absorption, corresponding with the number and epochs of the previous apoplectic or paralytic attacks. In one remarkable instance, no less than three old clots and two cavities were found in the brain, corresponding with five apoplectic fits during the last eight years of the patient's life.

Assuming, then (so far as a limited number of cases will authorize us), that fatal apoplexy is most common between the ages of 40 and 50, and of 70 and 80, and that, during these periods, it is accompanied in the great majority of cases with disease of the heart, the resulting inquiry is, whether a knowledge of these facts will enable us, by the resources of our art, to diminish the mortality from this fearful disease. I believe that it will contribute to produce this effect, and in the following manner:—

Not many years ago diseases of the heart were involved in deep obscurity; they could seldom be detected before they were so far advanced as to be incurable; and their pernicious influence on the brain was unknown as a general fact. Under these circumstances no precautions were, or could be taken, to protect the brain from their influence. Nor was this all: the modes of treatment adopted were often precisely the most injurious that could have been devised. For instance, a person of the alleged "apoplectic constitution," but *really* labouring under undetected hypertrophy of the heart, would judge, from stunning headaches and rushing noises, &c. that he had a "fulness of blood in the head." To remove the supposed cause—his full habit—he would (after a cupping, perhaps) betake himself to the daily use of the boxing

gloves, the foils, or to some other violent exercise. The result would be an apoplectic fit.

Another patient, affected with enlargement of the heart, is subject to palpitations, and invariably finds them aggravated by flatulence, or acidity of the stomach; his inference is direct, that it is "all indigestion." Amongst the remedies to be adopted, "air and plenty of exercise" of course take a prominent place. The result is an apoplectic seizure.

Now exercise is, of course, very suitable for reducing mere fulness of habit, and also for invigorating the digestive powers; but by stimulating the action of the heart, already too energetic for the brain to bear, it proves the destruction of the patient in such cases as the above.

Another patient is languid, sluggish, exhausted by slight exertions, always ailing, yet without any specific malady, —symptoms which are common in females affected with dilatation. The friends of the patient rally her on her indolence; tell her that "she only wants rousing," and "should stir about," &c. She makes the attempt; the congested brain becomes still farther gorged, and she falls a martyr to apoplexy or palsy.

Such were the disasters that often occurred, when we had no means of ascertaining the existence of disease of the heart in its early stages. At present we are in possession of those means; the discovery of auscultation having rendered the detection of these diseases as easy and certain as that of any other great class. Experience subsequent to the discovery has also completely proved, that, when detected in their early stages, they are, in a large proportion of cases, susceptible of a radical cure; and, in many others, may be so far counteracted as not to curtail the life of the patient.

Under these circumstances, then, we may, I think, reasonably anticipate a diminution of the mortality from apoplexy and palsy. The diminution would refer more especially to these maladies as occurring before the age of 50; because affections of the muscular structure are the most remediable forms of disease of the heart. Between 70 and 80, a less diminution of the mortality is to be expected, because we possess no means of removing ossification. Yet even here the apoplectic tendency may be greatly obviated by suitable precautions, and life in many instances extended to its natural span.

It would be in my power to corroborate the above abstract of *fatal* cases by about 200 more which have come under my observation *without* proving fatal; but as these cases have not the certainty which can only be afforded by post-mortem examination, it would be unphilosophical to generalize from them, whatever degree of evidence they may afford to myself.

The fatal cases quoted included three of epilepsy, in all of which death occurred before the age of 41; and in two the malady was connected with organic disease of the heart. I may add, that I have repeatedly found epilepsy exhibit this connexion, and I believe that such is not unfrequently its unsuspected source.

The second paper, from the pen of Dr. Vetch, related to Cholera. This disease, the writer remarked, had, as a general rule, prevailed most extensively and fatally at the estuaries of rivers, in alluvial formations. He suggested that sulphur might be tried as a prophylactic, having understood that the seapoys sometimes used it for this purpose. Analogy also, he observed, favoured the idea, sulphur having some power in guarding against ague and some other diseases.

ON THE

UNION OF BONE;

Being the Substance of an Essay which obtained the Jacksonian Prize.

By B. Phillips, Esq.

Since the time of Fabricius Hildanus, who died in 1634, the uniform and almost unvarying opinion which had been cherished was, that the consolidation of fractured bones was effected by means of a gelatinous fluid extravasated between the fractured ends of a bone, and which (gradually becoming more consistent and viscid) contracted adherence with the fractured extremities, and established between them a firm union. This process was supposed to be accomplished in a manner similar to the coaptation produced in two

pieces of wood by the interposition of strong glue.

This gelatinous fluid was named *osseous juice;* and to secure its deposition in sufficient quantity, it was thought necessary that the patient should be fed upon glutinous matter, vegetable as well as animal.

If this theory were correct, it must follow of necessity that the callus should be organic.

As it is incontestible that no union can take place in an organic body through the medium of an inorganic substance, the illustration of our predecessors is essentially inapposite. Observation has clearly demonstrated that callus is susceptible of becoming organised; and we can place no distinctly marked demarcation between the points where callus ceases to be termed callus, and where it undergoes its first change in its progress towards ossification.

As I believe the opinion in the present day is almost universal, that it is through the medium of this "callus" that union is first procured between fractured bones, and as I presume this opinion to be the correct one, the questions which naturally arise next in order are—How and when is this substance deposited? What are the characters and changes which are presented in the different stages of its progress toward that period when osseous matter is deposited, and the union becomes solid?

No rational opinion appears to have existed on the nature and mode of deposition, or secretion, of the substance termed callus, until the early part of the eighteenth century. In the years 1739, 1741, 1742, and 1743, that excellent naturalist, Henri Louis Duhamel du Monceau, sent to the Académie des Sciences at Paris a series of essays, for the purpose of demonstrating the importance of the periosteum in the formation of bone. These essays were based upon experiments he had made by feeding animals on madder; their results I shall shortly describe. He endeavoured to establish an analogy between the mode of development of bone and that of the ligneous fibres of plants.

His opinion (founded upon a very extended series of experiments) was, that the callus is entirely formed by the periosteum, which he regarded as the organ by which ossification was accomplished.

"When," says he, "a bone is fractured, the periosteum of the two fragments first becomes agglutinated and tumefied, and forms a kind of collar around the fracture: the periosteum, tumefied and penetrated by the fluids which flow into it, becomes softened, and assumes a gelatinous appearance, and is not long in passing into the state of cartilage; vessels are developed in this cartilaginous substance; osseous nuclei are formed in considerable numbers, and are united with each other; and when the whole of the periosteum adjoining the fractured portion is thus hardened and ossified, it forms a species of collar, by which the union is maintained."

The opponents of Duhamel, and particularly Bordenave, raised against the theory the following objections:—If we split a bone longitudinally, at the situation of an old fracture, we shall find the fragments completely identified; that there is not merely a contact, as is the case when two pieces of wood are maintained in apposition by means of glue.

In answer to this objection, he stated that the periosteum is elongated from the circumference towards the centre of the bone, and that the prolongation of this membrane experiences the same changes as the adjoining portion, and thus unites the two fragments between which it is interposed. He stated also, that in some cases the internal periosteum, or medullary membrane, may furnish prolongations which may be also interposed between the fractured portions, like those of the external, with which it becomes united.

Such was the celebrated theory of Duhamel, which during a long period of time was destined (in spite of the great talents of some of its opponents) to hold, in almost entire control, the schools of Europe.

Among the more powerful of its opponents were Haller and his pupil Dethleef, who (after numerous and ingenious experiments) became convinced of the correctness of the theory of the ancients, which was, "that the callus was formed by a glutinous juice which flowed from the fractured extremities of bones, and was extravasated around the fractured portion; that this substance became organised, presented a cartilaginous appearance, and ultimately was ossified by the successive deposition of earthy nuclei."

However different in appearance may be these two theories, they are in entire accordance as to the means by which the union is effected; their difference is solely as to the manner in which this gelatinous fluid, or lymph, is produced: Duhamel maintaining that it is produced exclusively by the periosteum, whilst Haller and Dethleef state that it is a lymph proceeding from the fractured ends of the bones.

It is now generally admitted that Duhamel attributed too much of the process to the periosteum, and that Haller and Dethleef were incorrect in their ideas regarding the production of the lymph.

The experiments of Haller and Dethleef were repeated by Bordenave, Professor in the Ancient School of Surgery in

Paris, and the results obtained by him served to confirm, in the main, those of Haller, but his mode of explanation was different.

Instead of attributing the formation of the callus to the periosteum, like Duhamel, or to the transudation of lymph, like Haller and Dethleef, Bordenave thought that the union was effected in a manner similar to that to which nature resorts in the union of soft parts. His opinion was founded on the following circumstances: "that there is in bone a vascular tissue, destined to maintain in it the circulation of the nutrient fluids; that this tissue is dilated in the period of union of fractures, as is seen by the tumefaction which exists at the situation where the callus is deposited, and that without this tumefaction no union is effected."

It is singular that so much acrimony should have characterised the discussions which took place between the disciples of Haller and Bordenave; for I can scarcely distinguish any important difference between the theory of Haller and that of Bordenave; each is not far from the truth. Up to a very late period these were the opinions generally professed on this important subject.

In our own times the opinions of our countrymen have been much modified by those of John Hunter; he explained the formation of callus, by explaining the changes which occur in the blood, which is extravasated at the seat of fracture. "This blood," says he, "is coagulated, loses the greater part of its colouring matter, is penetrated by vessels, passes to the state of cartilage, and then becomes ossified; and that the magnitude and the form of the callus is dependent upon the quantity of blood extravasated."

These opinions of Hunter have been revived by Howship, who has succeeded in demonstrating and injecting vessels which ramified in the callus; but I am not aware that he has prosecuted his experiments beyond the thirty-second day.

The opinions of Bordenave, which are somewhat similar to those of Hunter, have also been reproduced by J. Bell, Bichat, Scarpa, Richerand, Boyer, and other modern physiologists.

Some years since, Dupuytren, supported as well by direct experiment as by the evidence afforded by examination after death, discovered that the cause of the contrariety of opinion existing on the subject was, that all of the theories which have been successively promulgated, instead of including all the facts of which the process of consolidation is composed, was each based upon the observations afforded by the examination of only one or two periods of the process. Their inventors thought that the single circumstance which they had seized amply served to explain the whole of the phenomena of the operation. I am not aware, either, that before the researches of Dupuytren any important distinction was well established between the phenomena which are observed in the formation of callus in simple and in complicated fractures.

Whatever be the mode by which callus is produced, one thing is well established, and that is, that in the first fifteen or twenty days the substance called callus is deposited, and that from the thirtieth to the fiftieth day this substance acquires much solidity.

Before I proceed to detail the experiments which I have made, I may remark, that in the perfect union of fractured bones, as in the cicatrization of wounds in the soft parts, it is necessary to distinguish union with from that without suppuration. Whatever be the tissue in which a cicatrix is to be formed, the proceeding by which it is to be effected is alike; but we must carefully distinguish union by the first from that of the second intention.

Bones, like the soft parts, offer these two modes of cicatrization; but though the results of each mode may be the same, the attendant circumstances are widely different; for in the dense tissue of bones, the process of inflammation is not easily excited, and when excited, is long in passing through the several stages necessary to the production of union, while the soft parts readily enter into this state, become by this process consolidated, embrace the fractured bones, and thus secure them against the probability of displacement, which without this arrangement would no doubt frequently occur. [Here follows a series of experiments and observations.]

"In the conclusions I shall draw from the preceding observations, and which are, I think, fairly deducible from them, I state, first, that neither the theory of Duhamel, of Haller, of Bordenave, of Hunter, of Howship, nor of J. Bell, appear to me (from the result of these experiments), to be the correct method of explaining the mode of union in fractured bones; though each may satisfactorily explain certain stages of the process. For neither is the union dependent exclusively upon the ossification of the periosteum, as maintained by Duhamel; on the transudation of a peculiar fluid from the fractured ends, as maintained by Haller and Dethleef; nor on the existence of granulations upon the fractured extremities, as maintained by Bordenave, Camper, Boyer, Richerand, and Searpa: but it appears to result from the conjunction of two or more

of these processes, according to the circumstances of the case."

All the phenomena which are presented in the union of simple fracture of bones, are merely so many stages of a common adhesive inflammation developed in the tissues which are implicated by the fracture.

The consequence of the injury which has occasioned the fracture, is the production of a certain quantity of laceration of the medullary membrane, periosteum, and the surrounding tissues, as well as of the vessels they contain, and the consequent escape of a certain quantity of blood. This is the first and immediate consequence of such an injury; and it is demonstrated by the cases which I have detailed.

The common effect of such injuries is the development of acute inflammation, which is manifested successively in the cellular, muscular (if implicated) fibres, and osseous tissues. This I have also demonstrated.

The successive changes which then follow are merely so many forms presented in the accomplishment of the various phenomena incidental to such a disease.

The quantity of blood poured out into the tissue, in the vicinity of a fracture, is variable; dependent upon the quantity of injury inflicted upon the soft parts, and upon the plethora of the subject.

The extravasated fluid soon coagulates; its colouring matter, its fluid portion, and much, if not the whole, of its lymph, are absorbed in a few days.

Here, therefore, I maintain that the doctrine of the Hunterian school is on this point incorrect; for the size of what is termed the callus is no further dependent upon the quantity of blood effused than this—that the quantity of blood effused is a tolerably fair criterion of the quantity of laceration which has occurred; the quantity of laceration indicates, to a certain extent, the quantity of irritation produced; the latter, of the extent of inflammation; and upon the quantity of inflammation is the size of the callus almost entirely dependent.

The surrounding vessels are first infiltrated with blood; in a few days its lymph is removed, and we then find these tissues merely gorged with serum.

Inflammation being excited, it occasions a deposition of lymph in the cells of all the affected tissues; and we find, that in proportion to their susceptibility to inflammatory excitement is the rapidity with which the deposition occurs in the cells of each tissue.

So we find that it occurs first in the cellular tissue, which acquires more density and a great increase of bulk; next we find (when the muscular is implicated), similar phenomena are manifested in it; next in order is the fibrous tissue, which acquires an increased thickness, with a loss of density, because here the matter deposited in its cells has less density than the tissue itself.

The inflammation of this latter tissue is always accompanied by a tendency to generate and deposit a substance, which forms a sort of frame-work for the reception of earthy matter, which is deposited as soon as the frame-work is completed; and it is by this process the medullary canal becomes lessened. It is never deposited over the fractured point until the continuity of the fibrous tissue is established. From such an arrangement, this deposition has no tendency to give solidity to the bone before union has been effected.

Soon after the development of inflammation in the fibrous tissue, the medulla becomes similarly affected, and it becomes transformed into a dense semi-cartilaginous mass: that contained in the one portion of the bone becomes united to that contained in the other, and in this manner a cylindrical plug, like mass, is formed, which really does contribute powerfully to the support of those bones which are in apposition the one with the other.

The last tissue which becomes inflamed is the osseous; and in this, inflammation is more tardily excited. When excited, it is long in developing itself, and the thickening, or tumefaction, is not ordinarily well marked before the fortieth day; lymph is soon after thrown out at the ends of the fractured bone, and it connects the one portion with the other: this lymph has to acquire a cartilaginous consistence before a particle of osseous matter is deposited in its cells.

In bones subjected to inflammation, an absorption of the earthy matter invariably occurs, and the deposition of new earthy matter does not occur until the connecting medium has attained a consistency equal to that of the original bone from which the earthy matter has been removed. In the union of fractured bones, the deposition of osseous matter, then, in the newly-formed tissue does not commence, in an adult, until from the seventy-fifth to the ninetieth day, and is not concluded (by which I mean that it has not acquired the form and the density which was possessed by the bone previous to the occurrence of the accident) before the 200th to the 250th day.

The bones are retained in contact partly by the tumor which is formed around them by the deposition of coagulable lymph in the cells of the cellular and other tissues, occasioned by the inflamma-

tion which has been set up; partly by the plug which is formed internally, and partly by the interposition, between the fractured bones, of a substance which adheres to them. This substance is first a portion of the coagulable lymph derived from the extravasated blood, and after the removal of this, it is a substance deposited by the surrounding inflamed membrane; this becomes fluid, and is absorbed, when the deposition from the ends of the bones commences.

As soon as the inflammation is sufficiently subdued, the absorption of the coagulable matter constituting the tumor begins, and continues until it is removed. It must be evident that no definite time can be named for this occurrence; it must be dependent on the quantity of injury and on the constitution of the patient: as an average time, however, may be some satisfaction, I would say that in the adult it usually commences about the fortieth day.

The phenomena of inflammation are, in their development and in their removal, more tardy in the medullary than in the cellular and muscular tissues; so that the internal plug remains stationary for a much longer period than the external collar, and, on an average, is not entirely removed before the 250th day.

If the fracture be comminuted, the detached portions of bone lose their earthy matter, and become almost confounded in the medium by which the fracture is united.

The point of union is no longer visible externally after the 130th to the 160th day. The periosteum usually acquires its continuity from the 95th to the 115th day, and, when this is entirely completed, a deposition of bone commences, by which the point of union and more or less of the old bone is covered. This appearance does not cease for a very long time.

Such, then, is my method of explaining the mode by which union is effected in the simple fracture of bones; it is warranted by the facts which I have recorded, which, I submit, constitute an irresistible support to the conclusions I have detailed.

The principles are somewhat modified by the circumstances which occur in compound fracture (by which I mean here those only which communicate with the exterior), and I shall proceed to detail the phenomena which have been observed in a few cases of this kind, and then conclude my explanations of "the mode of union in simple and compound fractures."

By a compound fracture I must be understood, in this place, to mean any fracture (either with or without comminution) which has a communication with the exterior.

I insist upon this distinction simply because the continued contact of atmospheric air appears to be the great agent by which certain material changes occur between the mode of union in simple and compound fractures.

The observations which will be found detailed in support of the opinion I shall hereafter express on this subject, are only ten in number; but I trust that, after a perusal of them, it will be conceded to me that they are sufficient to give an unyielding support to my theory of "the manner in which union is effected."

Here follow the experiments and observations.

Such are the facts which I have to offer in support of the opinion which I shall presently express, as to the mode by which union is effected in compound fractures. I have not detailed cases in which, in consequence of certain peculiarities, suppuration has continued for many months, because, whatever may be the time at which, in these cases, union is effected, the process is the same, but the length of time occupied in its performance is different. The cases I have detailed were favourable, and were, as I conceive, those best adapted to the elucidation of this very important subject.

Whenever inflammation is developed in cases of fracture, it is a constant consequence either of those injuries by which the fracture has been occasioned or of those produced by the violent displacement of the bone.

It has been found that exposure to the atmosphere has a tendency to keep up this state, and that in such cases it very often proceeds to suppuration.

That this effect may be fairly attributable to atmospheric influence, is rendered most probable by the fact, that if we can effectually exclude the air by uniting the lips of the wound, we shall most probably arrest the progress of the inflammation, and, in fact, resolve the case into one of simple fracture.

When a surface has become the seat of suppuration, that surface can be healed only by the development of granulations, by which the loss of substance is repaired. The time when these granulations will appear is of course uncertain, and dependent on a variety of circumstances; but it appears to be necessary that the quantity of inflammation requisite for the existence of suppuration, shall have somewhat abated before their development can occur.

Upon the surfaces of the fractured bone a similar production is developed: those on one portion form a junction with those on the other, and in this way a kind of granular union is brought about.

These granulations are not developed upon the ends of the bone until the latter becomes inflamed and suppuration has been established.

As a consequence of the existence of inflammation, the bony tissue loses much of its density by the absorption of its earthy matter; which always occurs under such circumstances.

When this kind of union is produced, much time elapses before solidity is acquired; the newly-formed tissue gradually acquires more and more density, until it becomes cartilaginiform; the deposition of earthy matter then commences, by means of which perfect consolidation is produced.

It has now been demonstrated, that in the union of simple and of compound fractures, a different process is employed, and I will state that difference in its simplest form. The ultimate union is effected in simple fractures by the development upon the fractured surfaces of a species of albumino-fibrinous matter, which, by its viscidity, attaches the portions of bone to each other. This matter continues to acquire more and more density, until it arrives at a state when it is adapted for the reception of earthy matter, by which consolidation is completed.

In compound fractures, instead of the albumino-fibrinous product, granulations are developed upon the fractured surfaces; they become united to each other, and retain the bones in apposition, as is the case with the fluid I have described in simple fracture. These granulations follow a similar course in their progress toward the period when they are adapted for the reception of that earthy matter, through the agency of which solid union is accomplished.

LITERARY INTELLIGENCE.

Preparing for publication, by Subscription, in folio, Fractures of the Extremities, exhibited in twenty Plates, shewing the Causes of Displacement: with an Explanation of the Appearances, and Mode of Treatment. By G. W. Hind, M.R.C.S. Lond. formerly House-Surgeon to the Middlesex Hospital, and late Curator of the Museum of Anatomy of the University of London.

Andral's "Clinique Médicale," translated and condensed, with Practical Remarks, by Dr. Spillan, will speedily be published.

In the press, and nearly ready, Dr. Underwood's Treatise on the Diseases of Children; with Notes and Observations, by Dr. Merriman. This Edition (being the ninth) has received considerable additions, and is brought down to the present time, by Dr. Marshall Hall, F.R.S.

The Sphygmometer; an Instrument which renders the action of the Arteries apparent to the Eye. Being a Memoir presented to the Institution of France, by Dr. Julius Herisson; with an improvement of the Instrument, &c. by the Translator, Dr. E. S. Blundell. 8vo.

In the press, Practical Observations on the Physiology and Diseases of the Teeth. By Mr. J. Mallan.

NEW MEDICAL WORKS.

Lewis's Plates of the Muscles of the Human Body. 4to. 15s. bds.

Spratt's Obstetric Tables, Part I. 2d edit. 4to. 21s. cloth.

Treatise on the Formation, &c. of Urinary Calculus. By J. G. Crosse. 4to. 2l. 2s. plain; 2l. 12s. 6d. coloured.

Life of T. Linacre, M.D. By J. N. Johnson, M.D. Edited by R. Graves. 8vo. 9s. bds.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *Feb.* 24, 1835.

Abscess	1	Hooping Cough	13
Age and Debility	38	Inflammation	28
Apoplexy	8	Bowels & Stomach	4
Asthma	16	Brain	4
Childbirth	3	Lungs and Pleura	4
Consumption	45	Insanity	3
Constipation of the Bowels	1	Jaundice	1
Convulsions	24	Liver, diseased	3
Croup	2	Measles	6
Dentition or Teething	9	Mortification	1
Diarrhœa	1	Paralysis	5
Dropsy	12	Small-Pox	11
Dropsy on the Brain	11	Spasms	4
Dropsy on the Chest	2	Stone and Gravel	2
Epilepsy	1	Stricture	1
Fever	8	Thrush	1
Fever, Scarlet	5	Unknown Causes	20
Fever, Typhus	2	Stillborn	16
Heart, diseased	2		

Decrease of Burials, as compared with the preceding week . . . 281

NOTICES.

Mr. Jeffreys' request shall be attended to.

We beg respectfully to inform the Editor of the "Records of General Science," that the extract from his journal was acknowledged in the usual manner: we wish all our contemporaries were as honest and punctilious in those matters as we are.

WILSON & SON, Printers, 57, Skinner-St. London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, MARCH 7, 1835.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture XXIII.

DISEASES OF THE HEART.

SIGNS OF DISEASES OF THE HEART.

I now proceed, gentlemen, to the description of the signs of the diseases of the heart and its valves, after which I shall detail the treatment of these affections.

Simple hypertrophy of the left ventricle.—If the stethoscope be applied between the cartilages of the fifth and seventh ribs, a strong impulsion is communicated to the head of the observer. The force and duration of this shock is proportionate to the degree of hypertrophy of the ventricle. This impulsion is immediately followed by an apparent sudden recession of the heart from the parietes of the chest, which Dr. Hope denominates the "back stroke." The sounds of the heart now become very indistinct; that produced by the contraction of the ventricle, which is naturally slight, is almost entirely lost; and that caused by its dilatation is of much shorter duration, and less noisy, than in the healthy state.

The extent of surface on which the pulsations of the heart are heard becomes diminished; it is often confined to the space comprised between the cartilages of the fifth and seventh ribs, or to a surface over the ventricle equal only to a square inch.

The patient, although not subject to strong palpitations of the heart, except when under excitation, feels almost constantly, the sensation of the beatings of the organ. Irregularities or intermittences of the pulse are also rare in this case; Laennec thought they sometimes occurred from partial hypertrophy of the walls of the cavity.

The pulse is often strong and developed, but occasionally it is reduced, so as to give the sensation of a mere thread feebly vibrating under the finger. Indeed, you should never rely upon the force of the pulse at the radial artery as indicating the force of the action of the heart; for often the pulse will be feeble, and the movements of the heart strong; and sometimes the reverse will take place—that is, the pulse will be strong and the heart feeble. The face is frequently of a bright red colour, and it is said that apoplexy supervenes upon this form of cardiac disease more frequently than upon any other.

Simple hypertrophy of the right ventricle.—When the stethoscope is applied to the inferior half of the sternum, the impulsion of the right ventricle is very distinguishable; it is precisely similar in character to that given by hypertrophy of the left. This sign, when marked, may be considered as certainly indicating this disease.

According to Corvisart, the dyspnœa is greater in this affection than the preceding; this probably arises from disease of the lungs being usually its primitive cause. The face also assumes a more livid tint.

Lancisi was the first to announce that a swelling of the external jugular veins, accompanied by pulsations analogous and synchronous to those of the arteries, was a sign of hypertrophy of the right ventricle. Corvisart denies this sign to exist. The observations of others have, however, confirmed that of Lancisi, although the jugular pulsations are most common when the hypertrophy of the ventricle is combined

with its dilatation. Bertin explains this, by saying that where there is hypertrophy and dilatation of the right ventricle, the tricuspid orifice becomes larger, and consequently the valves do not meet at their edges so as to close it, and that therefore, at each contraction of the ventricle, the blood regurgitates into the right auricle, and communicates its impulsion into that contained in the jugular veins. Dr. Hope asserts that the valves always enlarge with the dilatation of the orifice sufficiently to close it, so that no regurgitation can take place, and that the ventricular contraction impels the blood against the closed valves, which communicate the shock to the blood contained in the right auricle and external jugular veins. I have twice seen the right jugular vein pulsating, and not the left: this is an anomaly difficult of explanation.

Hypertrophy of both ventricles.—When the two ventricles are affected, the signs consist of a reunion of those proper to each ventricle, but, according to Laennec, with a constant predominance of those indicating hypertrophy of the right ventricle.

Simple dilatation of the left ventricle.—The impulsion given by the contraction of the ventricle is now entirely lost; its dull sound is converted into a clear loud noise, similar to that of the ventricular dilatation. The heart's beatings are so feeble that they are often not to be felt by the hand; and the sound on percussion is dull over an extent of the chest proportionate to the degree of dilatation of the ventricle. The pulse is generally soft and weak, and there are feeble palpitations.

Simple dilatation of the right ventricle.—The pathognomonic signs of this disease are not only derivable from the absence of all impulsion at the inferior portion of the sternum, but from the presence of a clear noisy sound heard in that situation, and to a distance beyond, according to the extent of the dilatation. I refer you to the scale of progression of sound, which I gave in the first lecture upon diseases of the heart, and to the exceptions to the general rule I there announced.

It has been observed, also, in this disease, that the pulse offers nearly the same characters as when the left ventricle is similarly affected. Palpitations are felt, generally consisting of an increase of the frequency and noise of the beatings of the organ; the impulsion, instead of being augmented, is generally diminished. Irregularities of force and frequence of pulsations accompanying the palpitations rarely occur; still, however, they are more frequent than when the heart is in a state of hypertrophy. Compared with dilatation of the left ventricle, it is seen that, in that of the right, the dyspnœa is more intense, that there is a greater tendency to dropsy, that hæmoptysis is more frequent, and that the face is tinged with a deeper violet or lead colour, although sometimes it is remarkably pale.

Extended absence of sound on percussion is not always constant in simple dilatation, as Corvisart supposed, but it is rather found in cases of hypertrophy with dilatation.

These general signs may occur in other affections of the heart when arrived at a certain degree of intensity, and are therefore not to be depended upon, except when confirmed by the local signs.

Hypertrophy with dilatation of the ventricles.—This, the active aneurism of Corvisart, is by far the most common affection of the heart; its local signs are composed of those proper to hypertrophy and dilatation. Thus the contractions of the ventricles give an impulse to the head of the observer by means of mediate or immediate auscultation, in proportion to the thickness of the parietes of the heart. This impulse seems to be formed at first by the application of only a small part of the heart to the corresponding internal parietes of the chest; immediately afterwards it is felt as if produced by the whole mass of the heart, which then instantly recedes, giving the "back stroke." In extreme cases it produces the sensation of a large mass of flesh rolling, or irregularly revolving, in the chest. I have seen the force of the ventricular contractions communicate their shocks to the whole person of the patient —nay, even to the bed on which he was placed, so that the pulse could easily be counted by the movements of the bed-furniture; this was the case in the individual from whom I obtained this enormous heart [presenting it.] The impulse of the ventricles can easily be felt also by the hand, which is, as it were, repelled by short and sudden blows, especially at the moment of palpitation of the viscus: to use the words of Corvisart, if the cardiac region be compressed, the heart "seems to be irritated by the pressure, and reacts stronger still." The beatings of the temporal, radial, and other superficial arteries, are perfectly distinct. The pulse is often strong, hard, and vibrating, particularly when the disease attacks the left ventricle; this is, however, not constant, for I have met with cases in which, although the heart beat thus violently, yet the pulse could not be felt until after a slight bleeding and the administration of digitalis. Palpitations of the organ are frequent, although irregularities of its movements are rare, except towards the approach of death,

or when there is great weakness. The dull sound of the ventricular systole now becomes much louder, and the clear and quick sound of the diastole is lost.

The distance to which the pulsations of the heart may be heard is now great; thus it may not only be distinguished in the precordial region, but, as the organ increases in size, all over the surface of the chest.

If the left ventricle be alone affected, the impulsion and noise will be great between the cartilages of the fifth and seventh ribs, and to the left side generally. If the right ventricle be hypertrophied and dilated, the same signs will be evident beneath the sternum, and towards the right side. If both ventricles be diseased, a combination of the signs proper to both affections will exist.

Signs of hypertrophy and dilatation of auricles.—The signs of these affections are yet extremely uncertain. The left auricle is usually thus diseased in consequence of a contracted mitral orifice; and it may be inferred, when a "bruit de soufflet" exists produced by that contraction, that in all probability the auricle is diseased. The signs of hypertrophy and dilatation of the right auricle are still more obscure.

Laennec makes the following important observations in relation to the local signs of diseases of the heart:—

Great errors of diagnosis may be committed if you make but a single exploration of the condition of the organ; it is necessary that you should repeat your examinations, taking also into consideration the general and functional signs which may co-exist; for nervous emotions, so commonly observed upon a first application of the stethoscope to the chest of a patient, may produce palpitations, which, to an inexperienced observer, may give the signs of hypertrophy or dilatation, when really neither of these states are present. Sometimes, too, in consequence of the carelessness or insufficiency of the investigation, these affections may be overlooked. Examine, therefore, closely, carefully, and repeatedly, before you conclude as to the nature of the disease.

There are, perhaps, few individuals whose hearts are in the precise relation of volume or force to the rest of the organs of the body. A large-sized heart may in one case produce no distressing effects, if the chest be ample; while, if the organ be of a similar size in a person whose chest is contracted, death may soon be the consequence. It is therefore of great importance, in establishing our prognosis, to examine the capacity of the chest at the same time with the general volume of the heart.

In children the heart is generally larger in proportion to the rest of the organs than in the adult, and they often present the signs of hypertrophy with dilatation; but as they arrive at the age of puberty, an equilibrium is commonly established.

Individuals, either at the youthful or the middle period of life, if possessed of a good constitution, may have the heart moderately hypertrophied or dilated, without any very perceptible inconvenience, perhaps being merely subject to occasional palpitations, or slight dyspnœa. In the lower order of people the organ is doubtless often diseased for a long time, and they pay no attention to their symptoms until they are seriously incommoded by them.

But if any disease supervenes, or as age advances, so that the body becomes thinned, and the powers of the individual diminished, the disproportion between the heart and the rest of the organs becomes more evident, and symptoms of cardiac disease will manifest themselves. A delicate female, or a man of sedentary occupations, will soon experience serious symptoms from this disproportion.

The stethoscope may therefore exhibit proofs of hypertrophy and dilatation of the heart, and yet the general and functional signs of such states may not exist. The knowledge, however, that the organ is too thick or large is of great value, as it indicates the necessity of recommending means to diminish its too active nutrition and force; for it is much easier, especially in young persons, to prevent the occurrence of the general and functional signs of these diseases, than even to relieve a single symptom of them.

All the local signs of hypertrophy and dilatation disappear under two circumstances:—1. During the agonies of death, or the dyspnœa which usually precedes it for some days, or even weeks, the impulsion of the heart, and the sounds of its movements, cease almost entirely, whatever be the size of the organ; but the frequency of the pulse is often so great, that it cannot be counted. Corvisart observes, that the movements of the heart are then changed into a "bruissement étendue, un tumulte obscur et profond, impossible à décrire." 2. The coincidence of any affection capable of producing considerable dyspnœa, as peripneumonia, œdema pulmonum, hydrothorax, empyema, &c. tends to diminish the force of the impulsion of the organ very considerably.

Signs of diseased valves.—The general signs of obstruction caused by diseased valves are associated with those of the affections of the heart itself; I shall therefore describe them at the termination of this subject, and proceed at present with their special symptoms only.

Signs of diseased mitral and aortic valves.—When these orifices become contracted to a certain degree, the "bruit de soufflet" becomes apparent. This sound, as I have already mentioned, is similar to that produced by the blowing of a bellows whose valve makes no noise; it is sometimes like that heard from the sawing or rasping of wood at a distance. Dr. Hope states that the latter sound is produced by the blood rushing over a rough surface, as of that of an ossified valve, where the phosphatic matter is denuded in consequence of the membrane forming the valve being partly destroyed. Occasionally the "bruit" offers a musical intonation; but I have never heard this except in the arteries.

But as the bruit de soufflet occurs under circumstances of nervous agitation, as well as when the orifices are obstructed, it is of great importance to observe whether it be constant or not. If it be present for weeks or months together, you may be assured it depends upon organic lesion; if, however, it be fugacious, so that it may be heard one day and not another, then you may be equally assured that it is not caused by any permanent obstruction, but in all probability by some peculiar excitement of the nervous system. Sometimes, too, the bruit de soufflet is so slight that it cannot be distinguished by a common observer. Occasionally, also, the heart, although manifestly diseased, will not produce this sound if the patient be in a perfectly quiescent state. Desire him to walk quickly up a flight of stairs, or as rapidly as he can along a plane surface, the circulation then becomes quicker and more energetic, the blood rushes through the impeded orifice with greater force, and the bruit de soufflet becomes louder where it was but slightly audible, and often perfectly distinct where before it was not to be distinguished.

When the aortic orifice is obstructed, a distinct bruit de soufflet may be heard superficially under the centre of the sternum, coinciding with the contraction of the ventricle. When the mitral orifice is in a similar state, that sound is then heard towards the left edge of the sternum; it is then more obscure, evidently deeper seated, and coincides with the ventricular dilatation, the noise produced by that dilatation being entirely obscured by it. Another mode of detecting which orifice is affected, is by feeling the pulse at the radial artery whilst you are listening to the bruit de soufflet; for if that sound is synchronous with the elevation of the vessel, it is the aortic orifice which is affected; if with the depression, it is the mitral; for the contraction of the ventricle, the passage of the blood through the opening into the aorta, causing the bruit, and the pulsation of the arteries, occur at the same moment of time, or sufficiently nearly so for all practical purposes, as to be considered at the same instant; while the dilatation of the ventricle, the passage of the blood through the left auriculo-ventricular orifice, causing also the bruit, and the depression of the arteries, occur also at the same moment.

If the valves be so diseased that the orifice they should close remains always open, then a second and a slighter bellows-sound will occur immediately after the first, in consequence of the reflux of the blood. The same double sound would also be produced if both the valvular orifices of the left side were affected, and therefore the diagnosis is rendered difficult. If, however, the aortic orifice admitted the reflux, the second bellows-sound would be heard nearer to the centre of the sternum, more superficially and louder than if it was caused by a reflux at the mitral opening: in the latter case, too, the bruit is heard towards the left edge of the sternum.

But, gentlemen, although the bruit de soufflet be always occasioned by obstruction to the circulation, caused by diseased valves, yet that sound may be caused also by other impediments to the current of the blood, especially in the aorta; thus I have met with this sign when that vessel has been contracted or dilated in its ascent, and where it forms its arch. I have before explained that these two opposite states are equally causes of obstruction to the current of the circulation. I think, therefore, we may be justified in saying that all organic causes presenting an obstacle to the passage of the blood from the auricles into the ventricles, and from the ventricles into the aorta or pulmonary artery, may produce the bruit de soufflet.

I have never had an opportunity of examining after death a case in which I had supposed the valves of the right side of the heart to be diseased. If the orifices of that side were rendered narrower, no doubt the bellows-sound might be distinguished towards the centre of the sternum.

The *frémissement cataire*, or purring vibration, is felt when there is a considerable obstruction at the left auriculo-ventricular, or at the aortic orifice. I have always found the intensity of this vibration to be in proportion to the loudness of the bruit de soufflet, and, like it, it may be increased by accelerating the circulation. This is often produced by nervous causes, but then it is never permanent, as when it arises from organic disease.

General signs of diseases of the heart.—When simple hypertrophy exists, the heart is thrown into frequent palpitations upon any mental or physical excitement. The pulse varies exceedingly; sometimes it

is strong and hard, corresponding with the vigorous and impulsive movements of the organ; at others it is small and thready, and bears no relation to the force of the action of the heart. Active hæmoptysis, or apoplexy, are occasionally the results of this form of disease, from the too forcible impulsion of the blood into the pulmonary and cerebral arteries. The turgid arterial capillaries tinge the face with a florid red colour. Œdema of the subcutaneous cellular tissue sometimes also occurs.

When hypertrophy and dilatation of the left cavities of the heart take place, especially if combined with obstruction at the aortic or mitral orifices, a series of symptoms arise, dependent upon the retardation of the flow of blood through these openings; by which retardation that fluid tends to accumulate in a direction retrograde to its current, and consequently too great a quantity is thrown into the venous system.

Let us suppose that the obstruction exists at the aortic orifice; the blood cannot pass it freely, it consequently accumulates in the left cavities of the heart; the movement of the organ is impeded, and it often struggles and palpitates in throwing forwards the fluid it contains. The pulse therefore varies in character; it may be feeble, if the ventricle be simply dilated, or it may be full, strong, and hard, as in hypertrophy with dilatations; although, in the latter case, it is sometimes exceedingly small. As the blood cannot readily flow through the left auricle and ventricle, congestions take place in the pulmonary veins and artery, their capillaries become gorged, and dyspnœa is the result. The distention of the pulmonary capillaries is occasionally so great, that apoplexia pulmonium and hæmoptysis frequently follow. This distention of the vessels causes also serous effusions, as I have already explained in speaking of dropsy; œdema pulmonum, or hydrothorax, or both states occur, aggravating the dyspnœa which previously existed. The dyspnœa is also increased by the enlarged heart pressing upon the lungs and diminishing the space in which these organs have to perform their functions.

The venous blood now preternaturally distends the right side of the heart, in consequence of the obstructed circulation through the pulmonary artery and veins. The superior cava can therefore no longer pour its contents freely into the right auricle and ventricle, and the blood accumulates in the whole of its system. The external jugular veins are filled, the superficial veins of the face and neck become turgid, the countenance is coloured of a bluish or slaty tint; the lips swell and project; the face becomes tumefied from œdema of its subcutaneous cellular tissue. The deep-seated veins of the neck, the sinuses of the brain, and the cerebral capillary vessels, become engorged; the latter occasionally burst from their distention, and instantaneous apoplexy is the consequence; or, what is much more common, the increased quantity of blood accumulated in the vessels of the brain presses upon the organ and induces a slowly increasing sleepiness or coma, from which the patient can be aroused with difficulty. The pressure is also increased by the increase of serum in the ventricles, and he frequently dies in a state of apoplectic lethargy.

If the system of the superior cava be thus gorged with blood, there is still greater reason that that of the inferior cava should be in a similar state, since that fluid has to mount against its gravity. Thus we find that the venæ cavæ hepaticæ, the vena porta, and their capillaries, are always highly congested; the consequence of which is that the biliary secretion is augmented (at least the urine often assumes a deep yellow colour, as in jaundice), and the conjunctivæ and skin are similarly tinged, especially towards the termination of the disease. The mesenteric and splenic veins, to their minutest ramifications, participate in the general fulness; the intestines present a bluish tint; the capillaries of their veins are seen meandering and distended beneath their mucous surfaces; ecchymoses form in their sub-mucous cellular tissue, or blood is even extravasated upon the free surface of the mucous membranes; which fluid, in passing with the fæcal matter, gives the latter a black or melanotic appearance: sometimes even pure blood is discharged in coagula. Serum also accumulates in the cavity of the peritoneum, so as to form ascites to a greater or less degree.

If we trace the inferior cava downwards, we shall find that it and the veins supplying it are in a similar state of congestion: the saphena and its branches become varicose. I have seen the superficial veins of the belly even largely dilated. Œdema of the inferior extremities is also a constant result of this state of the veins.

You thus see, gentlemen, that in consequence of the obstruction to the current of the blood in the left side of the heart, the largest quantity of that fluid is thrown into the venous system. I have chosen for this demonstration an extreme case. You are not to suppose that these symptoms are always thus completely formed, nor that they always appear rapidly: it requires many months, nay, I have seen years elapse, before the above state of things becomes complete.

[These demonstrations were illustrated by drawings and diagrams.]

Treatment of diseases of the heart.—Simple

hypertrophy, or hypertrophy with dilatation, when arising from diseased valves, or contraction or enlargement of the aorta at its commencement, are states which I believe to be incurable, because the organic derangements which cause them are permanent; but I believe, also, that these conditions of the heart, produced by the long-continued and habitual positions of the body I have described, or by plethora or nervous causes, may be relieved, or even cured, by a judicious and persevering mode of treatment. Those cases, however, which cannot be cured, often admit of great palliation.

Our indications of treatment of simple hypertrophy, or hypertrophy with dilatation, are, in the first case, to diminish the action of the heart by diminishing the thickness of its parietes; and in the second, not only to lessen the thickness of its walls, but to cause a contraction of its enlarged cavity. Our first object should be to remove the cause of the disease. If it arise from the occupation of the patient, let him at once alter the position he is accustomed to, or change the nature of his business altogether: the latter is almost impossible to the lower classes, and the former often difficult. The shoemaker may, however, be made to work before an upright frame; the clerk can assume a less inclining position at his desk; but the weaver is unfortunately unable to change his position, as his loom is so constructed that he cannot work otherwise than in a bent posture. Persons of this class very often present themselves at the Lung Infirmary, or at the hospital, and it is surprising the relief they experience from changing the curved position they have been habituated to when at work, to an upright one. If the causes of the affection be diseased valves, or contracted or dilated aorta, we cannot hope to remove them by any means we possess in the present state of medical science.

To answer the indications laid down, the patient should be enjoined to take all the repose that is compatible with the continuation of his general health; all violent emotions of the mind or body should be sedulously avoided. The treatment proposed by Valsalva and Albertini for aneurism, should be adopted, but such is its severity that you will scarcely find any patient will submit to it for a long period. Their plan, however, although not carried to the extent they proposed, is always of advantage.

This treatment is most efficacious at the beginning of the disease. It consists in bleeding the patient copiously, although not to syncope, every two, four, or eight days, or more, until the palpitations and impulsions have ceased. The food should, at the same time, be diminished until his muscular powers be greatly weakened, avoiding all stimulants. If, after continuing this plan for two months, he feels no palpitation, and the strong impulse of the heart has ceased, then he may be gradually placed upon a more liberal diet. It will be necessary, of course, to return to the plan of treatment if the symptoms recur.

When the secondary symptoms of hypertrophy, or hypertrophy with dilatation of the heart, present themselves—as dyspnœa, anasarca, ascites, hydrothorax, or œdema pulmonum, manifesting a general dropsical state—bleeding, either topical or local, may yet be had recourse to; but more caution should be now used; a smaller quantity should be abstracted each time, recollecting that your object is not to relieve any inflammatory state, but that it is to remove the venous congestions which cause the serous effusions.

When a partial or general serous deposit takes place, diuretics have often been used with much advantage; although it must be admitted they are frequently very uncertain remedies. According to my experience, they are rarely useful except administered in large doses, and for a longer time than they are usually given. The diuretics in use are the nitrate, super-tartrate, and acetate of potash, digitalis, and squills: the latter may be given alone, or combined with mercury. Digitalis appears to me to have an effect upon hypertrophy of the heart perfectly independent of its diuretic qualities. No means, excepting the abstraction of blood, diminishes the impulsion of the organ so completely and so certainly. I have been in the habit of using it for several years for these affections, and have rarely seen it fail in producing at least temporary relief. I use the digitalis in the form of tincture, giving it in doses of ten drops three times a day; I continue it for a considerable time, taking care to suspend its administration for a short time if vertigo or nausea be produced by it. The hydrocyanic acid has also been used with a similar intention, but I have not seen it produce such decided effects.

If diuretics do not diminish the quantity of the serous effusion, some of the drastic purgatives may be combined with them; of all that class, the elaterium stands pre-eminent. I have frequently seen a distressing dyspnœa, general anasarca, and ascites, completely disappear under the influence of the repeated and copious discharges produced by this hydragogue purgative. It should be used with some caution, as no medicine varies so much in its activity; a quarter of a grain from one specimen may produce the most violent effects, while two, three, or four grains from another will hardly operate. I usually combine the

elaterium with calomel, and give it every other day, or twice a week, according to its effects upon the dropsical effusion, watching, however, that it does not distress or debilitate the patient too much. It often produces considerable nausea and vomiting before and during its operation upon the intestines; but the patient usually submits willingly to these distressing sensations, in consequenee of the relief he receives from the diminution of the dyspnœa and general anasarca.

Simple dilatation of the heart is not so easily remedied as the simple hypertrophy, or hypertrophy with dilatation. Bleeding should here be avoided, except when there is great congestion of the venous system, and then but a small quantity of blood should be taken for the purpose of relieving it, otherwise a fatal syncope might be induced. If dropsy supervene, then diuretics and purgatives should be had recourse to, although sparingly, and with caution. Tonics should also be given in this disease—as the bark, bitters, iron, and the carminative plants. When the pulse is very frequent, I often combine the digitalis with these means, and with good effect.

Such is the general method of treating these affections of the heart; but, gentlemen, you must rarely expect to cure them: palliation alone is usually effected; but to relieve is to do much. You can often protract the duration of life for years by perseverance, and sometimes, even when the disease does not depend upon a permanent obstruction to the circulation, a cure may be performed.

It were unnecessary to say a word as to the mode of treating diseased valves; for no means have yet been devised by which any effect can be produced upon them.

Carditis.

By carditis we mean an inflammation of the muscular substance of the heart: this disease is rare, and little is yet known either of its morbid anatomy or of its symptoms.

Paleness, redness, softening, and hardening, of the muscular texture of the heart, have each been considered proofs of inflammation of the organ; these, however, are but very equivocal evidences of this disease. The only appearance which may be considered as certainly demonstrative of carditis is the presence of pus infiltrated among the muscular fibres.

I am aware of but two cases recorded of universal carditis; the one is mentioned by Meckel, in which pus was found infiltrated into the muscular substance of the heart: this case was, however, combined with pericarditis; the other occurred to Dr. Latham, who describes the whole heart as being tinged of a deep red colour, that its substance was softened, and that innumerable small points of pus oozed from the section of the muscular fibres.

Partial inflammation, characterized by abscesses or ulcerations, are more frequent. Benevenius was the first to describe an abscess of the heart; Bonetus, in his "Sepulchretum," mentions also several instances. Laennec met with an abscess in the parietes of the left ventricle, near its base, of the size of a nut; pericarditis was also present in this case. The same author met with another instance, in which concrete pus was intermixed with the muscular fibres of the left ventricle: the patient had presented symptoms of acute inflammation of one of the thoracic viscera, although it was not possible to decide precisely its seat: an inexpressible anguish and orthopnea were the prineipal symptoms.

Ulcers of the heart.—Ulcers of the heart have been seen more frequently than abscesses. Care must be taken, however, not to confound a rough and unequal false membrane, which may be the result of pericarditis, with ulcerations of the muscular texture of the heart. Oläus Borrichius has described a case of ulcer of this organ. I here present you a specimen [shewing it] in which you perceive an ulcer is situated at the upper part of the left ventricle; it is about the third of an inch broad, and an inch in length: this heart is also ruptured. Laennec describes a case almost precisely similar to this.

Rupture of the heart.—This fatal lesion of the heart rarely occurs without previous ulceration of its muscular tissue. Haller and Morgagni have, however, detailed cases in which this accident has resulted from violent efforts. The heart occasionally becomes so thinned and softened, especially towards its point, that it is surprising it does not rupture in that situation frequently: such an accident is rare. Dr. Hope, however, mentions two instances of rupture from softening of the organ, one of which occurred to himself, the other to Dr. Williams.

These ruptures commonly take place at the upper portion of the posterior surface of the left ventricle, about an inch from its base. My friend, Mr. Langstaff, has two specimens of rupture in that situation; I possess two also, which are before you, similarly situated. On examining them, you will perceive that there is evidently ulceration of the muscular substance of the heart, proceeding from within to the exterior, and that this lesion was the cause of the rupture.

Rupture of the auricles, with or without ulceration, is still more uncommon than

a similar lesion of the ventricles. Bertin describes two instances of this accident—the one was the consequence of a fall, the other had no appreciable cause. Portal met with an instance of rupture of the superior vena cava at its junction with the auricle, in a young female, who died suddenly in a cold-bath.

Corvisart has described three cases of the rupture of the cordæ tendinæ and carneæ columnæ, occurring from violent efforts. A sudden and intense feeling of suffocation was the effect of these accidents, and finally the general symptoms of diseases of the heart were developed. I present you with a specimen of rupture of one of the carneæ columnæ of the left ventricle; but this is evidently the result of ulceration.

I have met with but two cases of ruptured hearts [they were exhibited], and instant death was the consequence in both. This fatal result is not always so immediate, for the blood accumulated in the pericardium occasionally forms a solid coagulum, preventing, for a time, a farther effusion. Cullerier mentions an instance of this kind in the Journal de Médecine for 1806.

Hardness of the substance of the heart.—The muscular substance of the heart sometimes becomes so hard in cases of hypertrophy, that it resounds, when struck, like horn; the scalpel cuts it with difficulty, and gives a creaking or crepitating sound in passing through it: the heart, nevertheless, retains its proper colour. The creaking or crepitation produced by the section is only heard when the firmness of the tissue is very great.

Softening of the substance of the heart.—The substance of the heart is now flaccid; it appears withered, and may be torn with the greatest facility; it is sometimes so soft, that the fingers easily penetrate into the ventricles by a slight pressure; the heart is rarely gorged with blood, but appears half filled, and is slightly flattened and collapsed. If an incision be made into the ventricles, they collapse equally, whatever may be their thickness. The colour of the organ is usually changed: sometimes it becomes intensely red, or of a violet aspect, particularly in fevers of a putrid character; more commonly it is of a yellow tint, like that of a pale dead leaf. This yellow-coloured softening may pervade the whole organ, or it may affect only a part; it is generally found where there is dilatation with moderate hypertrophy, or it may occur where there is simple dilatation only, although in the latter case the muscular substance of the heart is generally deeply red, or violet.

Signs of softening of the substance of the heart.—Laennec, who was the first particularly to describe this affection, gives the following signs by which it may be determined.

The sounds of the movements of the heart are duller and more obtuse, but never present the characters of bruit de soufflet. A total softening of the heart is perhaps always accompanied by a cachectic state. In persons thus affected, though they may possess a certain degree of health, the skin is yellowish, colourless, and withered. The organ may also be inferred to be softened, when an individual, attacked with dilatation with or without hypertrophy, has had long and frequent fits of suffocation, when the sufferings preceding death have been of long continuance, and when the violet tint of the face, extremities, and other parts of the surface of the body, has announced that a congestion of the capillary system has been formed for a considerable time.

When the heart gives equally moderate and dull sounds in its movements without impulsion, it is probably softened, but of good proportions.

When softening exists without dilatation, the sound, although louder, is yet duller than in simple dilatation.

When softening coincides with hypertrophy, the sound of the ventricular contraction is no longer audible, especially in extreme cases; these contractions then become also slower. Sometimes, however, during palpitation, the heart beats with great energy, and its contractions are quick and short, and similar to the blows of a hammer. After this effort, which may last many days, the organ falls into its habitual state of languor.

Softening of the substance of the heart co-exists with fevers of the adynamic or typhoid forms. Laennec does not assert that this state exists in all fevers denominated essential, but believes it to be always most marked where the signs of an alteration of the fluids are most evident.

Bouillaud attributes the softening and the hardening of the substance of the heart, as well as the alterations of its colour, to inflammation. It is replied to this supposition, that although the organ has been seen so soft that its fibres have broken readily between the fingers, yet pus has never been found among them; nor are there any local pains or general symptoms indicating an inflammatory condition, preeedent or present; and finally, that the treatment which is efficacious for softening of the organ is exactly opposed to that for inflammation.

The treatment for softening of the substance of the heart should be similar to that recommended for dilatation with thinning of its parietes; I refer you, therefore, to that subject.

Of surcharge of fat, and of fatty degeneration of the heart.—The heart is occasionally found covered by a large quantity of fat, which is deposited between its muscular substance and the serous membrane immediately investing it. This fat adheres firmly, and is placed principally at the base, edges, and point of the organ, and along the course of the coronary arteries; the posterior surface of the right ventricle is also sometimes covered by it, but it is very rare to find any upon the centre of the posterior surface of the left ventricle.

The parietes of the heart are generally diminished in thickness in proportion to the quantity of fat accumulated upon them; sometimes the thickness is reduced to almost nothing, particularly at the point, and at the posterior surface of the right ventricle.

When the heart is in this state, there is usually also a large accumulation of fat in the inferior part of the mediastinum, and particularly before the pericardium, between it and the pleuræ; this fat is firm; a number of fine blood-vessels ramify upon and through it, giving it a reddish tint; it sometimes pushes the pleura before it, and enveloped by that membrane it projects into the thoracic cavity, and forms irregular fringes, something like the comb of a cock. The fat directly applied upon the muscular substance of the heart is of a pale yellow colour, and of moderate consistence.

No signs have been found by which this state can be discovered.

Fatty degeneration of the heart consists in an infiltration of its muscular substance of a matter precisely similar to fat. This change is usually found in a small portion of the heart only, usually its point; but I present you, gentlemen, with a specimen, which I believe to be unique, and in which you perceive the whole heart to be in a state of fatty degeneration. The form of the muscular fibres is still very apparent, but their red colour has entirely disappeared; instead of which, they are of a pale yellow tint. If a scalpel be plunged into the organ, or paper be rubbed upon its surface, they become greased, as if by butter or lard. When, however, the degeneration is partial, it seems to commence from the external surface to proceed inwardly, so that near the cavity of the ventricles the muscular texture is very apparent; more externally it is less evident; and upon the surface it is often lost.

There are no symptoms yet known indicative of this condition of the heart.

Of cartilaginous or ossific deposits in the muscular texture of the heart.—The muscular substance of the heart has rarely been seen ossified. Haller relates the case of a child, in whom the inferior portion of the right ventricle, the most fleshy part of the left ventricle, the semi-lunar valves of the aorta, and pulmonary artery, and the aorta, were in that state. Renauldin published a most extraordinary case, of a student in medicine, of the age of 33 years, in whom the heart was found extremely hard and heavy; its muscular substance was in a state of petrification, presenting in some parts a sandy appearance, in others, that of a saline crystallisation. The carneæ columnæ were ossified without their form being changed, although they had increased in volume, some of them being as large as the extremity of the little finger, and appearing like stalactites, placed in different directions. The right ventricle was healthy; the temporal, maxillary, and a part of the radial arteries, were ossified on each side.

The symptoms of this case were strong and frequent palpitations of the heart; the cardiac region gave a dull sound on percussion, and when the hand was applied over the organ, a sort of separation of the ribs was felt; upon slight pressure, considerable acute pain was produced, which remained some time after the hand was removed.

Burns also mentions a case of ossification, in which some of the carnæ columnæ were transformed into bone. There are a few instances on record of ossification of the auricles.

Cartilaginous deposits are occasionally found in the muscular substance of the heart; but they are generally interposed between the internal membrane of the organ and its muscular fibres, and are rarely of considerable extent or thickness.

Laennec believed that an extensive ossification or cartilaginous induration of the heart would produce a considerable increase of the sounds of its movements, and that these sounds would probably be heard at some distance from the patient.

Other accidental deposits in the substance of the heart.—Tubercles have been found in the substance of the heart. Recamier records an instance of a part of the heart being converted into a scirrhous mass. I have seen a deposit of medullary sarcoma between the serous membrane enveloping the organ and its muscular fibres [shewing it]. Laennec, Andral, and Bayle, mention similar instances.

Serous cysts have also been observed between the serous membrane and the muscular fibres. Dupuytren met with one in the substance of the organ, projecting into the cavity of the right auricle.

OBSERVATIONS

ON THE

PATHOLOGY OF PHLEGMASIA DOLENS;

With the History of a Case which presented several unusual appearances.*

By —— Anderson, Esq.

Surgeon, Manchester.

The recent investigations of Dr. Davis, Mr. Lawrence, and particularly of Dr. Robert Lee, in this country, and of Bouillaud, &c. on the continent, all tending to one result,—and that result being the clearest possible elucidation of the pathology of this heretofore obscure disease,—have rendered further researches for its proximate cause almost superfluous; but the additional evidence which the case I am about to relate will afford, is strongly corroborative of the truth of their opinions, and would of itself, I am disposed to think, be an incontrovertible proof, if one were needed, of their accuracy in stating the proximate cause of this disease to consist essentially of inflammation of the coats of the veins.

In taking a survey of the opinions of those who have more particularly devoted themselves to the study of this disease, there will be found an admirable uniformity in their descriptions of the symptoms, and quite as wonderful a diversity in their opinions upon its pathology. Mauriceau, who is perhaps the first author who recorded his opinions on this subject, gives an account of the symptoms and progress of the ailment, quite as clear and as accurate as any who have followed him. He imputes the disease to a metastasis of the lochia into the lower extremities; he evidently perceived the corded state of the veins, but he had mistaken it for a nerve. Mesnard, thirty years afterwards, did nothing more than tread exactly in the footsteps of Mauriceau. Until the middle of the last century, Mauriceau's theory was universally adopted by the medical world; but at this period Puzos and Levret advanced their opinions upon the subject. They were the authors of the celebrated doctrine of metastasis of milk (*depôts du lait*). This theory maintained for a long time a brilliant reputation, and was at length superseded by the lymphatic theory. This latter hypothesis was first advocated by Dr. White, of this town, and strongly supported by Dr. Ferriar. They believed that the lymphatics of the lower extremities, in their passage through the pelvis, were injured to such an extent by the pressure of the fœtus upon them during parturition, as to excite in them a spreading inflammation, producing the phenomena of phlegmasia dolens. Dr. Trye, of Gloucester, afterwards supported this theory, but with this singular modification—that the lymphatics, in their passage over the brim of the pelvis, were absolutely cut through; and he inferred this from the fact, that up to that period the disease had never been known to occur twice in the same individual; and that this circumstance could arise only from the total destruction of the lymphatics.

Up to the time of the appearance of Dr. Hull's work, in 1800, not the slightest reference had been made by any author to the actual condition of the blood-vessels. Every writer had perceived the painful cord in the direction of the femoral veins, yet not one for a moment conceived the possibility of the blood-vessels being inflamed. It has been already stated that Mauriceau considered it a swelling of the nerve; Puzos and Levret believed it owing to an infiltration or metastasis of the milk into the cellular sheath of the vessels; and White and Trye looked upon it as an evidence of the truth of their opinion, that the lymphatics were in a state of inflammation. It is surprising that this corded state of the vein, which is invariably present, and, in fact, is the essential symptom of the disease, should have been considered merely as a casual circumstance, and have obtained so little notice. Dr. Hull was the first who declared that the phenomena of the disease could not be satisfactorily accounted for without a considerable primary affection of the blood-vessels. Of the manner in which he has disproved all the previous hypotheses on this subject, Dr. Davis says, "Dr. Hull, in his Essay, has criticised at some length, and with the ability which both his friends and his enemies have well known how to appreciate, the doctrinal speculations of his predecessors."

But he has not confined himself to proving the fallacies of previous writers: he has given us a more full and elaborate account of the disease, and has presented us with a body of clinical information and such acute and appropriate observations, as have obtained for its highly-respected author the reputation which he enjoys. His work is one which will at all future times, whatever may be the opinions of the pathology of this disease, be consulted with the greatest advantage. It is worthy of remark, that until twenty-three years after the appearance of Dr. Hull's work, not a single opportunity had occurred of verifying, by anatomical investigations, his opinion, that the sanguiferous system was

* Read before the Manchester Medical Society.

affected. In January, 1823, however, Bouillaud, in the *Archives de Médecine*, related several cases and dissections, in which the crural veins were obliterated in women who had suffered from this disease. In the following May, Dr. Davis read his essay to the Medical and Chirurgical Society of London, in which are reported four cases, with the appearances after death; in all of these the iliac and femoral veins had undergone considerable alterations in their structure, evidently the result of inflammation of their parictes. To Dr. Robert Lee, however, we are mainly indebted for the great advances which have been made in this branch of pathology. In his work on the Diseases of Women, recently published, he has recorded not less than twenty-five well-marked cases of this disease, twelve of them occurring in puerperal women, eight of which were fatal; and in these eight fatal cases, by an appeal to morbid anatomy, he has most satisfactorily demonstrated the fact, that venous inflammation is the cause of this disease. He has not only collected more information, but he has advanced further than any of his predecessors in this path of investigation. In all the fatal cases occurring in puerperal women which have fallen under his notice, he has been able to trace the inflammation into the uterine sinuses. He gives it as his opinion, that the inflammation commences in the uterine veins, and from thence spreads along the hypogastric into the iliac and femoral veins, and so along the lower extremity; and by this he is enabled to solve the mystery *why this disease should exist so frequently in the puerperal state.* In all the other cases of phlebitis which he gives an account of,—some of which were owing to violence done to the vein itself—some to the local application of cold—to ulceration of tissues through which the inflamed vein passed,—the attendant phenomena were precisely those of puerperal phlebitis; and in those fatal cases where opportunities were afforded of examining the tissues, the veins presented the same morbid appearances.

As the following case is, I think, a remarkable illustration of phlegmasia dolens, —being nothing more or less than phlebitis, with the consequences which must inevitably result to the tissues in the immediate neighbourhood of the affected veins, —I will at once proceed to relate it, with as much brevity as will just enable me to make myself understood.

The patient was 25 years of age, of the decidedly nervous temperament. Four years previous to conception had been very delicate; had suffered severely from chronic hepatitis, but at the time of conception was without absolute ailment, though reduced from previous attacks of inflammatory disease. During utero-gestation she gained flesh, and was not only exempted from all the usual ills of pregnancy, but had experienced a total cessation of all her previous ailments. At 4 o'clock on the evening of the 21st June, in the ninth month of pregnancy, the membrane ruptured, without the slightest perceptible contraction of the uterus, and the whole of the waters were evacuated. Half an hour afterwards labour pains came on, and continued increasing until 11 o'clock, when the os uteri was found dilated to the size of a shilling. Having ascertained that for the last few days the bowels had been rather confined, an aperient enema was directed to be administered, which very satisfactorily cleared them. The pains then continued increasing until 9 o'clock the next morning, when she was delivered of a female child. Immediately after the expulsion of the child, nearly a quart of blood was expelled from the womb; the placenta, which was found detached, was instantly withdrawn, and a perfect contraction of the uterus immediately brought about by manipulation—dashing cold water upon the abdomen, and applying cold cloths to the vulva. The patient remained in a state very nearly approaching to syncope for upwards of an hour. She was gradually restored from this state, and in the course of two or three hours was considered out of danger. She convalesced well up to the third day after labour; it was then thought advisable to administer an aperient, as the bowels had not been moved since delivery: a few relaxed motions were procured, and from that time forward the bowels were continually more or less griped. On the 8th of July (the fourteenth day after delivery) the affection of the bowels was so severe as to necessitate the employment of opiates; these were alternated with aperients, and she gradually improved until the 14th, three weeks after delivery.

On the 15th, she complained, for the first time, of an obscure pain in the left side, groin, and hip, but declared it to have existed for a few days, and gradually increasing: at this time there was not the slightest constitutional symptom, or disturbance of any function. On the 17th the pain had become very acute, and had extended down the thigh; still not the slightest constitutional disturbance, or any perceptible swelling or redness. Concluding the pain to be rheumatic or neuralgic, a stimulant liniment only was directed to be used. On the 18th, at three o'clock in the morning, I was called up to afford some relief, if possible, to the acute pain of the thigh; rigors had taken place, the pulse was accelerated, and fever had

set in. On applying the liniment to the thigh, the femoral vein was found to be exquisitely tender and painful to the touch, and a slightly corded state of this vein was perceptible. Some degree of swelling of the thigh and groin was now evident. The real nature of the ailment being clearly discovered, thirty leeches were at once employed; the healthy lochia continued to flow, and there was no pain on pressure of the uterine region; the lacteal secretion, which for the last two or three days had been gradually decreasing, was now totally suppressed.

July 19th.—The whole leg, thigh, and foot, very much swollen; the skin white, but every superficial vein of the extremity was visible, of a rich blue colour. These veins were exquisitely painful when touched even with a feather; no relief appeared to have followed the application of leeches, and as the patient was yet in an anæmic state, from the hæmorrhage which had followed delivery, opiates were had recourse to, to mitigate the violence of the painful paroxysms which recurred two or three times a day.

July 20.—The superficial veins on the left side of the abdomen, as high as the umbilicus, and posteriorly on the loins up to the ribs, were precisely in the same condition as those in the extremity; the integuments being white and very much swollen. The pain felt in these parts was precisely of the same nature, and equally as acute, as that felt in the extremity.

July 21st.—The pain, swelling, &c. of the parts affected were at this time at the height; henceforward the pain and sense of tension became gradually less acute, the glossy state of skin became daily less evident, and the swelling began to pit upon pressure. The femoral vein remained hard and corded, and numerous other superficial veins gradually became visible, enlarging from day to day, and clustering together after the manner of varicose veins, evidently loaded with circulating blood. Previous to the paroxysms of pain there was slight rigors; during the paroxysms the pulse rose to 120, the swelling increased, sense of tension of skin, as if cords were pulling the leg, were experienced, and the skin became hot and dry. During the intervals, the pulse fell to the natural standard, the painful sensations passed away, and copious perspirations took place. The tongue was invariably clean and moist. From the time when the inflammatory symptoms began to subside, the disordered state of the bowels began to increase; the motions were green and fœtid; at first, three or four were passed in the twenty-four hours, accompanied with rather severe griping.

On the 25th of August, about a month after the phlegmasia began to subside, the affection of the bowels had become so severe as to threaten the patient's life; she had not less than from ten to twelve evacuations in the day. The motions were dark, green, mucous, and bloody, and each of them passed with the most excruciating spasm of the bowels that I have ever been a witness to. The patient described them to be much worse than the most violent labour pains. She suffered much from a most distressing nausea and vomiting. For three days previous to this date the stomach had been unable to retain for a moment even a tea-spoonful of any liquid. The matters rejected from the stomach were nearly of the same nature as those passed from the bowels, being a dark-green fluid containing flocculi of mucus. On placing the hand upon the abdomen during a paroxysm of spasm, the transverse colon might be felt contracting at different points upon portions of flatus. At the angle connecting the transverse with the descending colon, the bowel remained the most firmly contracted. When this gave way, the flatus and other contents of the bowels might be felt rapidly passing into the descending colon; and at this moment the patient, in a hurried manner, would express an urgent wish to pass an evacuation, which was at the same instant forced from her with the greatest violence.

During the short intervals of ease, when pressure was made on the abdomen, a sense of soreness was produced, and more particularly towards the hepatic region. The pulse numbered from 120 to 140 in the minute, small and feeble; the skin was hot and dry; the tongue remained moist, and of a natural colour; the urine, sparing in quantity, deposited a copious white sediment; the intellectual faculties perfectly unimpaired. As no remedy could possibly be introduced by the stomach, on account of its extreme irritability, opiate frictions were employed externally, and small laudanum injections were thrown up the bowels; but the irritability of the rectum was such, as to reject the enemata a few minutes after they were administered. The disease continued increasing in severity for the next week, perfectly uncontrolled by any remedial means that were employed.

September 1st.—At this time the patient's dissolution was hourly expected. She had the Hippocratic face, cold extremities, and cold sweats; the fits of spasm occurred about every hour; she was emaciated to the last possible degree; her feeble pulse fluttered at 160, and totally failed for a time after each paroxysm. At this time a large injection, consisting of a pint of milk, with two drachms of laudanum, was ordered to be thrown up the bowels, in the hope that a portion at least

might reach the transverse colon, and be retained a sufficient time to tranquillize the bowels. A portion was immediately rejected; but on examining the abdomen the transverse colon was found distended with the injection; it was retained there for seven hours, and had the full effect that was anticipated. The spasm of the bowels did not return until the enema was forced away.

By pursuing this plan the patient gradually rallied. These opiated injections were made as nutrient as possible, being composed of milk, with animal gelatine, and the white of eggs. By these means her strength was not only supported, but she gained flesh. The stomach remained for upwards of a fortnight so irritable, as not only to be incapable of digesting any aliment, but even of retaining, beyond a few minutes, the least portion of liquid. In the end, however, its functions were restored; and by the end of September there remained not the slightest affection of either stomach or bowels. I must observe, however, that as this disease gradually gave way, so did symptoms of disease in another part increase. She all along declared her opinion, that the disease which had afflicted her in the leg had passed into the bowels; and her reason for so thinking was, that during the absence of spasm, her sensations of tight painful cords in the bowels were much the same as she felt in the leg; and during her convalescence from this intestinal disease, she every day expressed her conviction that the disease was slowly but surely travelling towards the other leg. She described the same painful sensations to exist in the right side, groin, and hip, as she had experienced before the left leg was attacked with inflammation.

The patient's conjectures, at least as far as regards the phlegmasia, were perfectly correct, for on the 25th September the disease had fairly declared itself in the right leg. I need not describe its progress down the veins of this extremity; it will be sufficient, perhaps, to say, that it exactly resembled in all circumstances the affection of the left leg, which I have previously read to you; but in its course upwards, upon the integuments of the abdomen, it differed, though in extent only.

On the 26th September it had extended as high as the ribs, both anteriorly and posteriorly. The veins reflected from the groin up the abdomen were felt enlarged, hard, and painful. On the following day these veins were traced as high as the epigastrium; the day after, the veins on the opposite side of the lower part of the chest were seen in the same condition, but extending no further than, yet exactly up to, the line where the inflammation had extended itself when the left side was attacked. She now complained of inability to breathe, from a sensation which she experienced of cords binding down the chest, and preventing its expansion. On the following day the veins round the whole of the chest were evidently affected as high up as the axilla, and the embarrassment of breathing still greater; suffice it to say, that it spread into both axillæ, down both brachial veins to the ends of the fingers, up both the jugulars, and along the facials over the margin of the lower jaw.

During the whole progress of this inflammation over so vast a surface, there was not the slightest disturbance of the intellect; the tongue, too, remained always moist and clean,—in fact, there were nothing like typhoid symptoms. The febrile symptoms were certainly more remarkable than those which accompanied the attack upon the left leg; otherwise, the constitutional symptoms were such as I have described to attend the first affection. This disease gradually subsided; and about six weeks after the disease appeared in the left leg the patient was pretty free from complaint.

In order to give a more accurate idea of the consequences which have resulted from this ailment, I may as well describe the state of the patient at this day. She is pale, even chlorotic, in her appearance; she complains still of great weakness, but is able to take very moderate out-door exercise; her digestive organs are in perfect order, but she still remains very thin; the respiratory apparatus is without fault, with this exception, that when any muscular effort is attempted, violent palpitation ensues, and the breathing becomes for a time hurried and embarrassed. The external appearance of the chest, abdomen, and lower extremities, is rather remarkable. Upon the body clusters of veins may be observed, assuming a varicose state; they are very compressible, but rather painful to the touch. In other parts sinuous indentations are visible, and on pressing the finger upon them they give the feeling of minute cords, marking no doubt the site of obliterated veins. The legs are still œdematous, particularly towards evening. Both the femoral veins may be felt large and hard, rolling under the fingers, and still painful to the touch. The internal saphena veins are both very much swollen, but soft; they may be traced easily to the top of the thigh. The external saphenas are in the same state, and may be traced into the popliteal space.

On reviewing the history of this case attentively, and observing the order in which the various symptoms presented themselves, it will at once be obvious that phle-

bitis was the first cause of all the morbid changes.

In the first attack I recognised the swollen and hard condition of the femoral vein before I was enabled to pronounce upon the character of the disease. The swelling of the integuments and glossy whiteness of skin invariably succeeding to the altered condition of the vein, must be regarded as its consequence. The course which the disease observed, not only in the direction of the femoral vessels, but likewise in that of the superficial veins of the rest of the body, will at once prove the identity of phlegmasia dolens and phlebitis. Whether the phlebitis originated in the uterus or not, it may be a difficult point to determine, but I am disposed to conclude the affirmative. Dr. Robert Lee states that he has invariably perceived symptoms of uterine inflammation precede the development of this disease; and from the obscure deep-seated pain which the patient felt in the back, hip, and pelvis, before the disease was evident in the thigh, I am disposed to regard it as corroborating his opinion. It is possible that the cold effusion employed to restrain uterine hæmorrhage might have been the exciting cause.

From the total absence of all typhoid symptoms, I am disposed to believe that the suppuration of the internal coat of the vein, which is described as generally occurring in phlebitis, did not take place in this case. The typhoid symptoms produced by phlebitis have been attributed by all writers to the purulent secretion poured out from the inflamed inner coat of the vein mixing with the circulating blood, and thus acting as a general poison. From the beginning to the end of this case, we had nothing from which we could infer a poisoned circulation. From this absence of pus in the blood I have come to this conclusion,—that all the phenomena of phlegmasia dolens may be produced without any inflammatory affection of the internal coat of the veins.

If purulent inflammation be synonymous with excessive inflammation, we should have had it here, for it has been severe enough to obliterate a great number of veins, and considerably to diminish the calibre of many others—the femorals, for instance; for the saphenæ of both legs empty their blood as usual into the femorals, but are amazingly distended, no doubt from the difficulty they have in forcing their contents through the narrower tubes of the femoral veins.

I have formed an opinion, then, that phlegmasia dolens is essentially phlebitis, but that it exists in the proper or outer coat of the vein. That the inner coat of the veins have been found diseased, and the veins themselves filled with pus, in those fatal cases which have been examined after death, I can very easily suppose; this only proves that when the internal coat inflames and suppurates, death is the result; and from the many cases of recovery from this disease, I am led to believe that generally the inflammation confines itself to the outer tunic. The affection of the bowels which supervened upon the first attack has ever been to me an obscurity. The patient's opinion is perhaps as correct as any I can form—viz. that the disease extended from the legs into the bowels. From the patient's sensations of pain in the bowels resembling that felt in the legs when inflamed—from the gradual increase of this ailment as the inflammation of the left leg subsided—and from the gradual progress of the disease towards the right leg as the affection of the bowels became less severe, I am inclined to concur with her, and to suspect at least that this intestinal disease was owing to inflammation of the portal veins. I am further warranted in stating this, from the fact of the hæmorrhoidal veins being found in an acute state of inflammation at the termination of this attack.

The disease could be neither called peritonitis nor muco-enteritis, nor by any other name that I know of, unless the one I have suspected be the right one. Dr. Lee, in his article on Diseases of the Veins, in the Cyclopædia of Medicine, quotes a case from Dr. Osiander, of inflammation of the umbilical veins in a child, which exactly resembled the one I have related. It is not difficult to suppose the inflammation might have travelled from the extreme branches of the hæmorrhoidal veins, by means of those anastomosing branches which connect it with the mesenteric veins, or along the vena cava to the liver, and so on through its ramifications upon the bowels.

As this case is not one which could at any time be looked upon as a standard for the efficacy of any plan of treatment, on account of the debilitated state of the patient prohibiting the employment of those active antiphlogistic means which are so strongly recommended by all practitioners, I will merely observe, that the greatest advantage was obtained from the free use of opiates. When the disease was at the worst, the patient took as much as four grains of the acetate of morphia in the twenty-four hours. Every means that could be devised to mitigate her sufferings were had recourse to; and by a steady perseverance in this plan, and by using every exertion to keep up her strength, we were enabled at last to bring about her recovery. Dr. Hull's assistance was obtained very

early in the disease; and it is to his diligence mainly, and to his unwearied perseverance in the employment of the means used, and to the many valuable suggestions which he made from time to time, as the symptoms of the disease changed, that we are indebted for her recovery.

Feb. 1835.

OBSERVATIONS ON THE PATHOLOGY OF NERVES.

By Hugh Ley, M.D.

Physician-Accoucheur to the Middlesex and the General Lying-in Hospitals.

[Concluded from p. 765.]

The next instance upon which Mr. Pearson relies, as a proof and illustration of his opinion, is thus noticed:—"In the Essays and Observations, Physical and Literary, Vol. III., the late Sir John Pringle has published a case where a tumor, formed by extravasated blood, by pressing upon the intercostal nerves produced pain, irritation, and, perhaps, hiccup, which could not be stopped." Few would suppose from the terms in which this case has been alluded to, that it was an example of aneurism of the abdominal aorta, communicated through Dr. Donald Monro amongst his "Cases of Aneurisms, with remarks;" or that by the "intercostal nerves" Sir John Pringle meant merely the visceral nerves of the abdomen; or that the supposition of the dependence upon pressure, of the pain, irritation, and incurable hiccup, was purely a conjectural opinion, and that but an alternative conjecture. No direct connexion between the tumor and any particular nerve was traced upon dissection; but "upon a review of the whole," it was concluded, "that this tumor growing larger, and in time *pressing upon the intercostal nerves, or upon the transverse flexure of the duodenum*, it occasioned the hiccup, which could never be stopped, as the irritation was always increasing." That Sir J. Pringle alluded to the splanchnic nerves generally, is clear from the situation of the tumor, the upper boundary of which being the emulgent arteries, it could not have affected in any way the nerves either of the stomach or the diaphragm, with the morbid affections of which, excepting in states of extreme exhaustion or of sphacelus, we find hiccup to be so commonly associated. It is infinitely more probable that in this case the constant pain, which is represented to have been towards the left side, was the result of that inflammatory affection which caused the adhesion of the tumor to the duodenum, and that the hiccup was the natural consequence of that distention of the stomach which resulted from mechanical obstruction of the alimentary canal at its upper part*. If any direct influence had been exerted upon the nerves within the cavity of the abdomen, it might have been anticipated that those of the lower extremities would not have escaped; and so in reality it was, for "sometimes he mentioned a numbness in his feet." This last fact adds to the improbability that the spasmodic affection of the diaphragm, which is the essence of hiccup, should have been produced by the pressure upon nerves, as this would imply contrary effects from the same cause—excitement, producing convulsive movement, above the tumor; defective energy, amounting to paralysis, below it.

As to Dr. Bisset's interesting case, like that related by Dr. Short, it is just an example of the painful subcutaneous tubercle, the nature of which was not then satisfactorily determined, (although Camper had distinctly asserted that these "tubercula intra nervorum tunicas sedem habent,") but which all accurate pathologists now agree in considering as a disease of the nerve itself, producing in all cases the effects of a morbid excess of nervous energy.

The string of references, which the erudition of Mr. Pearson enabled him to supply, in a foot note to his interesting and valuable communication, has little relation to the immediate subject under consideration. They are either instances of irritable painful tumors, or diseases producing in sensitive habits great nervous disturbance, sometimes even epileptic paroxysms, implicating in some instances contiguous nerves in the same diseased action, as in cancer, and cured either by excision, or escharotics, or the actual cautery; or they are examples of that indefinite, and to this moment altogether unintelligible state of

* This tumor was of a firm consistence, beginning as high up as the emulgent arteries, where it *adhered* to the transverse flexure of the duodenum, and from thence descending till it came near the pelvis.—*Ess. Phys. and Lit.* V. iii. p. 206.

particular nerves, called the "aura epileptica," which, in those who are liable to epileptic attacks so frequently ushers in a paroxysm. But there is not one of the cases or general statements, thus referred to, which gives any countenance to the opinion, that "a certain degree of pressure upon a nerve will produce pain, spasms, or convulsions."

It thus appears that the cases, accumulated by the industrious researches of Mr. Pearson, are not sufficient to establish the conclusion that any degree of pressure upon a healthy nerve will produce excitement: nor are the arguments or observations of Mr. Swan more satisfactory. The chapter devoted by the latter writer to the subject of compression wants much of his usual clearness, and even contains something approaching to contradiction in the description of its effects. The details upon the subject of compression of nerves are introduced by an account of the effects of "extension," which Mr. Swan appears to think the same or synonymous with pressure. After stating that "a nerve may be extended some way without giving pain or inconvenience," he adds, "but when a nerve *is extended* in any considerable degree, pain is excited; and if the extension be increased, the pain is increased in proportion, till at length the nerve begins to ulcerate; and *if the pressure be not removed*, it becomes almost destroyed by this process." In his description also of the effects of pressure, the statements are either obscure or they are contradictory. Thus "when a nerve is pressed against a bone for a short time, an uneasy sensation is produced, and the parts to which it is distributed feel benumbed. When the pressure is continued longer, these parts entirely lose the power both of sensation and motion; but if it has not been very violent, they will recover;" and yet though impaired sensibility and defective muscular power are thus described as the consequences of the pressure of a nerve against a bone, it is subsequently asserted that "people frequently complain *of pain* in the lower extremities, which is sometimes *very excruciating*. It is often occasioned by the use of tight garters, *which press the nerves against the bones*. But although these two statements appear at the first glance contradictory, yet the contradiction is only apparent, and admits readiy of explanation. Both assertions may be true: pressure upon a healthy nerve produces enfeebled energy, but long-continued pressure, as from tight garters, occasions the nerve to inflame; and it has been already shewn that pressure upon an inflamed nerve is not only painful at the point of compression, but is often also productive of neuralgia in its remote distribution. All the cases adduced or quoted by Mr. Swan, in which pain attended compression of a nerve, will bear this interpretation of the symptoms. The first is an instance of severe pain in the toe, from thickening of the corner of the nail, which had occasioned "an indentation in the flesh about the size of a pin's point." It was in fact, in essence, a corn, only formed by the nail, instead of an inverted cone of hardened integuments, and pressing upon the subjacent sensitive tissues; and it is scarcely possible to doubt, that if the nerve in this case was affected at all, it was either from the continuous mechanical irritation of this "pin's point," or the nerve had become the subject of inflammation from the same cause; just as inflammation was produced by a gooseberry thorn, in the case recorded by Mr. Wardrop; by an angular piece of porcelain, in that related by Mr. Jeffries; by portions of the alveolar process, in those adverted to by Mr. Swan; and by decayed teeth, in the highly-interesting and instructive example detailed by Mr. Mitchell, as well as others alluded to by Swan and Descot. In the second case, a painful affection of the left leg, the fibres of the psoas magnus, and the small psoas muscle, were put upon the stretch by the tumor, with the walls of which "some of the origin of the anterior crural nerve *appeared as if incorporated*, and the body of the second lumbar vertebra was ulcerated; both circumstances rendering it highly probable that the nerves may have been inflamed.

The quotation from Lobstein merely states the facts, that the nerves of the crural plexus may remain uninjured in the midst of lumbar abscesses, but that in cold, steatomatous, and other tumors, the nerves may be wasted, too dry, flattened, applied or agglutinated to the tumors; and that in abscesses situated near the spine, and arising from caries of the vertebræ, the nerves are sometimes destroyed.

In the case of aneurism of the aorta, extracted from Scarpa's work, the pains

in the lumbar region, stretching over the abdomen, were traced, upon dissection, to be owing to "the effused blood, which had formed deep excavations in the substance of the left psoas muscle, *so as to disorganize* the lumbar nerves, and *injure* the anterior crural and obdurator nerves.

In Portal's case, the pain in the great toe of the left foot after eating is referred to the pressure by the last false ribs on the sigmoid flexure of the colon, producing compression of the lumbar plexus. But it must be borne in mind that there was also great curvature of the spine, involving disease of the vertebral column, and in this disease the origin of the lumbar nerves may have been implicated. This is rendered more probable from what was observed in Scarpa's case already referred to, and the instance I have quoted from Ollivier. Besides, I have seen no less than three instances, where the colon was so large and so hard at this part as to have been pronounced to be instances of ovarian tumor. Much pressure upon the nerves must here have been produced, and yet neuralgia attended neither; and the same observation will apply to those examples of minor distention of the sigmoid flexure, which are of every-day occurrence, but are unattended with any pain which can be referred to an affection of the nerves, although numbness, in a greater or less degree, is no uncommon result of pressure under such circumstances.

In the instance of pain from fracture of the glenoid cavity, there cannot be the shadow of a doubt that the nerves in the vicinity were first contused or crushed, then inflamed: and in the case quoted from Mr. Earle, it is expressly stated, as matter of belief, that the same blow which had fractured the clavicle, had lacerated or crushed the axillary plexus of nerves, just as they pass under that bone.

The case of paraplegia only proves that pressure in one degree produces enfeebled nervous energy, and that additional pressure renders the palsy more complete and unmanageable; that of partial paraplegia, from lying on the damp ground, can give no countenance to the notion that pressure upon a healthy nerve occasions pain; and the last instance recorded by Mr. Swan, is one simply of paraplegia, from sanguineous congestion within the spinal canal.

The very prevailing impression, therefore, that pressure in one degree upon a nerve occasions pain, in a greater degree paralysis, is vague and indefinite, as the difference of degree cannot be made the subject of estimate or description; but it is probably also erroneous, and perhaps, after all, it would be difficult, with all the new lights of modern physiological science, to improve upon the more intelligible, because more perspicuous, statement of Galen upon this point, that "when nerves are compressed by ligatures or the hand, by a phlegmon or a scirrhus, by dislocations or fractures, they *all* become in the first instance torpid, and are afterwards altogether deprived of sense and motion; and such affection of the nerves is called paralysis*: but when a nerve is inflamed, the patient frequently suffers from spasm and alienation of mind, and if he be fortunate enough to fall under the care of an intelligent practitioner, who will divide the nerve, the patient is cured of his spasm and mental disturbance, but the muscle upon which the nerve is distributed loses afterwards its sensibility and power of action†."

But this, after all, is a question to be settled not by authority merely, but by an appeal to experience; and one mode of ascertaining the effects of pressure, which would naturally suggest itself to the mind of one who is engaged in the investigation of these points, is the application of a ligature upon the nerve. The effects of ligatures, however, vary according to so many adventitious circumstances connected with their application, that the inferences deduced from them are unsatisfactory. These effects, for instance, are materially modified by the degree of tightness with which the ligature is drawn, and by its thickness; but it is universally admitted, that if drawn with a sufficient

* Si antem a duro aliquo corpore, quod illi extrinsecus innitatur pressus sit (nervus) ne sic quidem virtutis transitus non morabitur. Proinde nervi, qui vel funiculis vel manibus sunt constricti; et qui ab externo aliquo, quod vel phlegmone sit obsepum velcum sensus noxa duratum, (schirrhum vocant) premuntur; *omnes* principio quidem torpent, postea vero omnino sensus motusque expertes fiunt. Et vocatus quidem ejusmodi nervorum vitium, Græce, paralysis, id est (nervorum) resolutio.—*De Sympt. Causis*, lib. 1, cap. 5.

† De motu musculorum, lib. i. c. 1, already quoted.

force, and with a string sufficiently small to overcome the protecting influence of the neurilematous covering, the consequences are the same as those produced by a complete solution of continuity of a nerve. The direct and immediate consequences, therefore, of the complete division or removal of a portion of nerve being identical with those of the effective application of a ligature, any observations or reasoning which are legitimate and true as to the one, will be equally applicable to the other; and as the division or excision of a portion of nerve always involves, as its necessary consequence, the annihilation of its function below the seat of injury, so also it may be inferred that paralysis will be the inevitable result of the efficient application of a ligature. Thus, to say nothing of the experiments of physiologists, the surgeon in his operations has, in some instances included inadvertently a nerve in the ligature which was intended to remove a tumor, or compress an artery. An instance of this is related by Morgagni:—A ligature was applied by Valsalva upon the brachial artery, on account of an aneurism produced by a wound in the artery in bleeding. "All the parts below the ligature lost their faculty of sense and motion as soon as it was tied, and the extremity became cold a few hours afterwards*."

But ligatures present to us several sources of fallacy, which rarely influence our deductions in cases of division or excision. If the ligature be thick, or not tied with sufficient force, or the nerve be very large, the medullary fibres protected by the neurilema may not be sufficiently compressed to intercept their function, which in such cases may be only impaired, not destroyed. But even in these cases the immediate consequences are more frequently those of enfeebled energy than excitement †.

In such cases the function of the nerve is commonly restored at no very remote period, as might be expected, the continuity of the medullary filaments not being completely interrupted. Still the ligature in these cases must have ulcerated the nerve through, to allow of its escape from the wound; but it is not difficult to understand, nor hard to believe, that as the ligature advanced by very slow degrees through the nerve, the part behind may have gradually healed; an opinion rendered the more probable, from the observations of Mr. Swan, that before the ulcerative process commences, and the ligature consequently becomes loose, "immediately the vessels of the injured portion of the nerve begin to enlarge and become more numerous, and coagulable lymph to be effused, and "the ligature becomes incased by the lymph" which forms the medium of communication between the portions above and below the ligature. "In an experiment seventy-two hours after the application of the ligature, the separated portions had been united by lymph and the vessels had anastamosed."

There has been considerable discrepancy of opinion, and even some controversial discussion, as to nature's mode of reparation in these cases of re-union, whether after ligatures or division with a knife. All are agreed, however, that the first change is an effusion of lymph which becomes organized, but whether new medullary matter is subsequently deposited has been the matter of dispute. Meckel has marshalled the forces on each side of the question. He represents Cruikshank, Haighton, Fontana, Michaelis, Monro, and Mayo, to be in favour of partial or imperfect reproduction of nervous matter, whilst Arneman decidedly rejects the opinion, asserting that cellular tissue, condensed by inflammation, is the sole mode of communication; the opinion of Meckel himself being, that the last of the series of changes which completes the restoration of the nerve is a conversion of the substance deposited into true medullary matter*. The decision of this question is of secondary importance; it is enough that the intermediate substance performs the office of

* Frequentia etiam experimenta sunt, quæ, vinculis nervo injectis fiunt. Tunc enim partes omnes musculi qui nervos suos a trunco nervi ligato accipiunt, resolvuntur paralyticæ neque porro a voluntate in motum cieri possunt.—*Haller, Elem. Phys.* V. iv. p. 322.

When a nerve has been included in a ligature, the parts to which it is distributed are deprived of sense and motion, in the same manner as if they had been divided.—*Swan on the Diseases of Nerves*, p. 145.

† La ligature d'un nerf, meme volumineux, ne produit pas les convulsions, les spasmes, et autres accidens graves que les pathologistes se sont plu à attribuer à ce genre de lésion.—*Descot*, p. 109.

* Les expériences rapportées plus haut semblent autoriser à croire que cette substance nouvelle, d'abord homogène dans les plaies de tous les organes, peut finir par se convertir, peu à peu, en véritable substance nerveuse.—*Meckel, Manuel d'Anatomie, &c.* Vol. I, p. 285.

nervous matter, communicating to the sensorium the impressions from without, and conveying from within the mandates of the will to the muscles influenced by the nerve which has been tied or divided. Mr. Swan is of opinion that not only is the communication carried on through this "new formed substance," but also that "in some instances new nerves are formed to keep up a communication with the brain." But this opinion requires the confirmation of more numerous experiments and observations than have been hitherto collected upon the subject. It appears quite within the bounds of possibility that those described by Mr. Swan may have been minute nerves, now first perceptible in consequence of that enlargement, which is consequent upon greater exertion; enlarged by what Mr. John Hunter would have denominated, in his very peculiar phraseology, "the stimulus of necessity."

[To be concluded in our next.]

INJECTIONS OF THE VESSELS OF THE FŒTUS,

TO SHEW SOME OF THE PECULIARITIES OF ITS CIRCULATION*.

By Dr. John Reid.

Three fœtuses were injected in the following manner:—A red-coloured injection was thrown up the vena cava inferior, and a yellow-coloured injection down the vena cava superior at the same time, and as much as possible in equal quantity, and with equal force, to endeavour to imitate the currents which flow along these veins during the life of the fœtus. As it is impossible that one person can manage both, it was necessary to intrust the two syringes to different persons; and this must render the success of the injection more precarious. It was principally wished by these injections to try to what extent the Eustachian valve prevented the intermixture of the two currents entering the right auricle by the two cavæ; and, provided that the Eustachian valve really had the effect of keeping the two currents to a certain extent separate, directing the greater part of the ascending current directly into the left auricle through the foramen ovale, whether these two currents still continued separate in their subsequent course,—that passing along the aorta going entirely to the large vessels of the head and superior extremities, and that through the ductus arteriosus filling the descending aorta.

The first trial was made on a fœtus of four months. By some mistake the injection was not thrown down the cava superior, and that thrown along the cava inferior was in small quantity. On examining the heart, we found that the red injection had passed along the cava inferior; that some of it had passed into the right auricle, but the greater part had been directed through the foramen ovale into the left auricle by the Eustachian valve, so as to fill the whole of the left side of the heart, while not a single drop of injection had passed into the right ventricle.

This experiment, then, was not entirely useless, for it shewed, in this case at least, that a fluid ascending through the inferior cava passed more readily into the left side of the heart than into the right. That part of the injection should have passed into the right auricle, was to have been expected; for though the Eustachian valve when perfect nearly insulates the cava inferior from the cavity of the right auricle, yet it cannot entirely exclude the passage of some of the fluid into the right auricle, when that cavity is not occupied by the column of blood which descends through the superior cava.

The second trial was upon a fœtus at the full period. Upon examination we found, that, though the two currents chiefly passed in the course which we shall fully describe in the third experiment, yet some intermixture had taken place. This was not to any great extent. This intermixture might depend upon two causes. First, the Eustachian valve is supposed to be less perfect at the full time than at an earlier period; and, secondly, the injection was not so well managed as it ought to have been, from the difficulties experienced in two persons commencing and stopping exactly at the same time, and using nearly equal forces.

The third trial was upon a fœtus of about seven months, to judge from its

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* Edinburgh Medical and Surgical Journal.

size and the position of the testicles. Care was taken, by a previous course of training, to throw in the two currents as equally as possible. On tracing the red injection upwards, we found that it had passed through the foramen ovale, and filled the left side of the heart, without any intermixture with the yellow, except very slightly at the posterior part of the right auricle. Not a drop of the yellow appeared to have accompanied the red into the left side of the heart. From the left side of the heart it ascended the aorta, and filled all the large vessels going to the head and upper extremities. The injection in all these vessels had not the slightest tinge of yellow.

On tracing the yellow downwards, we found it filling the right auricle, free from intermixture, except slightly at the posterior part of the auricle, as already mentioned. From the right auricle it filled the right ventricle, passed along the pulmonary artery, and filled the ductus arteriosus, and branches going to the lungs. On entering the aorta, it passed down that vessel, filling it completely without any intermixture of red; and thus all the branches of the thoracic and abdominal aorta were filled with yellow. The whole of the red had passed to the upper part of the body. In an experiment of this kind, the injection, after filling the left auricle, passes along the pulmonary veins, but, during the life of the fœtus, these veins must be filled by the blood returning from the pulmonary arteries. Had the injection been sufficiently minute, it would have passed from the pulmonary arteries into the pulmonary veins, and, consequently, we would have had some intermixture of yellow in the left auricle.

Though it may be doubted whether these two currents keep themselves so distinctly separate in the living fœtus as they appear to have done in this last experiment, yet, from the result of these three injections, we may be justified in concluding, that the blood returning from the placenta principally passes to the head and superior extremities, and that the lower part of the body is principally supplied by the blood returning by the cava superior, or, in other words, by blood which has already made a circulation in the body.

REPLY TO MR. RICKMAN'S REMARKS

ON THE

INFANT MORTALITY IN MANUFACTURING TOWNS.

By M. L. H. Villermé,

Member of the Institut *.

To the Editor of the Medical Gazette.

Sir,

The high importance of the last "Returns of the Population of Great Britain," the impress of truth which is stamped upon them from beginning to end, the great esteem which I have long entertained for the learned compiler, and the desire of one day seeing those valuable documents made the model of similar ones in France,—all these considerations induced me to draw up that analysis which Mr. Rickman has done me the favour of making some critical remarks upon, in your journal of the 24th January.

I perceive by those remarks that he does not accord with me respecting the duration of life in the manufacturing, as compared with the agricultural, counties. In fact, from his calculations, founded upon the number of marriages, baptisms, and deaths, combined in a certain way, and taken in connexion with the amount of the population in 1831, it would follow that if the number of deaths of children under two years of age were subtracted from the whole, the re-

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* [We think it but fair and proper towards M. Villermé, to give the original as well as the translation of his letter.—Ed. Gaz.]

"La haute importance des derniers *Returns of the Population of Great Britain*, le cachet de vérité que l'on y apperçoit d'un bout à l'autre, la grande estime que depuis long-tems j'ai vouée à leur savant rédacteur, et le désir de voir ces précieux documens servir de modèle en France pour des recherches sur la population, tout m'en a fait rédiger une analyse que Mr. Rickman a honorée d'observations critiques insérées dans le cahier du 24 Janvier de votre journal.

"Je vois par ces observations, qu'il ne pense pas comme moi en ce qui concerne la durée de la vie dans vos comtés manufacturiers comparés aux comtés agricoles. En effet, selon lui, il résulterait des chiffres des mariages, des baptêmes, et des enterremens combinés entre eux d'une certaine manière et avec le chiffre de la population trouvée en 1831, que si l'on retranche les décès des petits enfans âgés de moins de deux ans accomplis, tous les autres décès sont à la population entière, dans l'Angleterre prise en masse,

mainder would exhibit for all England a mortality of 1 in 75, while in Lancashire (which both of us take as a sample of the manufacturing counties generally) it is 1 in 77. This is the simple question between us.

The consequence of Mr. Rickman's statement is manifestly at variance with my opinion. With regard to the mortality of very young children we are both agreed, and the rather, as I admit, as well as he, that those children having nothing to do with the factories, cannot suffer directly from their influence. But it is surely quite immaterial regarding the present question, whether those children die, as Mr. Rickman says, by the families to which they belong being cooped up in close and confined dwellings in the vicinity of the factories, or by the direct influence of the latter, since the crowding of the habitations is caused by the manufactories themselves, or by the condition in which the operatives are obliged to live. Whether a person be killed by a splinter of rock struck off by a cannon ball, or by the ball itself, is it not all the same? is it not the cannon-shot that has killed him? Add to this, that every thing I said with regard to the influence of your manufactures was founded, as it should be, altogether on the tables of mortality in the third volume of your returns. Finally, I have not separated that influence (and I said distinctly I did not), from the effects of residence in the chief manufacturing towns, nor that of the rapid increase of population by births becoming more numerous than they ever previously were.

I have just said that I borrowed my facts entirely from the official mortality tables. Now, these tables are far from authorising a smaller proportion of deaths, subsequent to two years of age, in the manufacturing counties (in Lancashire particularly), than in all England beside, more especially the agricultural counties; this the following table, which any body may verify from the documents in question, will prove.

Of 10,000 Individuals born in the Agricultural Counties.	The Survivors of their 10th Year amount to	The Number that die between their 10th and their 40th Year.	
		Reckoning from Birth.	Reckoning from the 10th Year.
Rutland	6816	1847	2711
North Riding of York	7053	2097	2974
Hereford	7199	2025	2813
Wilts	6860	2070	3018
Westmoreland	6876	2069	3009
Berks	6654	2080	3124
Northampton	6574	2095	3187
Buckingham	6549	2097	3202
Dorset	6806	2035	2990
Oxford	6494	2023	3115
Suffolk	6694	2156	3221
Huntingdon	6257	2053	3281
Northumberland	6691	2132	3187
Norfolk	6118	1893	3094
Devon	6359	1834	2884
Essex	6407	2203	3451
Bedford	6541	2323	3551
Lincoln	6115	1995	3262
Cambridge *	5775	2044	3539

* The high mortality of Cambridgeshire for the ages between 10 and 40, must be imputed to the unhealthiness of the Isle of Ely. As to that of Bedford and Essex, which are both above the mean mortality of the said ages for all England, I know not what to say. I have, I should add, never visited England; and the classification of the counties which I adopt is taken from English authorities, quoted by me in my Analysis of the Parliamentary Returns.—L.H.V.

Of 10,000 Individuals born in the Manufacturing Counties.	The Survivors of their 10th Year amount to	The number that die between their 10th and their 40th Year. Reckoning from Birth.	Reckoning from the 10th Year.
Salop	6684	2180	3262
Worcester	6062	2083	3436
Durham	6272	2054	3273
Nottingham	5686	2019	3551
Warwick	5739	2023	3525
Stafford	5640	2120	3759
West Riding of York	5619	2078	3698
Chester	5917	2272	3840
Lancaster	5148	2111	4100
Monmouth *	6661	2047	3073
Mean for the Agricultural Counties	6495	2038	3134
——— Manufacturing do. Monmouth excepted	5645	2104	3726
All England proper	6094	2064	3387
In Wales	6728	2013	2992
In England and Wales together	6125	2061	3365

* Monmouthshire here presents a low mortality from 10 to 40; but Mr. Rickman has no confidence in the correctness of the returns for this county. Excepting Monmouth, therefore, there only remain Salop and Durham, in which the mortality from 10 to 40 is below that of all England during the same period.—L.H.V.

Thus it is not merely the *infants* in the manufacturing districts who are subject to a high mortality; those between 10 and 40 years of age are exposed to a similar risk.

But further, on Mr. Rickman's own showing,—notwithstanding the position he has more recently adopted,—my statements are fully borne out. This appears from the 43 tables of the English county mortality, which are all reduced to the scale of 10,000, and have each a column headed "In each period of man's life died per cent." There the

comme 1 est à 75, et, dans le Lancastre (que lui et moi prenons comme type des districts manufacturiers), comme 1 est à 77. A cela se réduit toute l'argumentation.

"La consequence est évidente: elle milite contre mon opinion. Quant à la mortalité des très-petits enfans, Mr. Rickman et moi sommes d'accord, et d'autant mieux que j'admets, avec lui, que ces enfans qui ne travaillent pas dans les fabriques ne peuvent en recevoir directement d'influence. Mais peu importe, pour la question actuelle, qu'ils meurent, comme Mr. Rickman l'a dit, par l'entassement des familles dans des habitations trop étroites au voisinage immédiat des manufactures, ou bien par une influence directe de celles-ci, si l'encombrement des habitations est amené par les fabriques elles-mêmes, ou par les conditions dans lesquelles virent leurs ouvriers. N'est-il pas vrai qu'être tué par une pierre qu'un boulet de canon frappe et lance dans l'air, ou bien par le boulet lui-même, c'est également mourir d'un coup de canon? Ajoutez que tout ce que j'ai dit de l'influence de vos manufactures s'appuyait et devait s'appuyer seulement sur les tables de mortalité du troisième volume de vos *Returns*. Enfin, je n'ai point séparé cette influence, et j'ai eu le soin d'en avertir, de celle du séjour dans les villes où sont les principaux ateliers, ni de celle de l'accroissement rapide de la population par des naissances devenues plus nombreuses que jamais.

"Je viens de dire que j'avais pris mes faits dans vos seules tables officielles de mortalité. Or, ces tables sont bien loin de justifier une moindre proportion des morts passé l'âge de 2 ans, dans les comtés manufacturiers et particulièrement dans le Lancastre, que dans l'ensemble de l'Angleterre, et surtout que dans les comtés agricoles. Vous allez en juger par le tableau suivant, de l'exactitude duquel on peut s'assurer, en refaisant les calculs à l'aide des tables dont il s'agit. [See Table in the Text.]

"Ainsi, ce ne sont pas seulement les petits enfans qui éprouvent une mortalité plus forte dans les districts manufacturiers de l'Angleterre, que dans les districts agricoles; les personnes âgées depuis 10 ans jusqu'à 40 l'éprouvent également.

"Mais d'ailleurs, Mr. Rickman a pris soin lui-même, malgré l'assertion qu'il m'oppose aujourd'hui, de justifier ce que j'avance. Car ces quarante-trois tables de mortalité des comtés de l'Angleterre proprement dite, qu'il a ramenées à 10,000 décès totaux, afin de les rendre parfaitement comparables, ont toutes une colonne intitulée *In each period (of man's life) died per cent.*

important fact which I have just stated is expressly set forth, for the several classes of ages comprehended in the tables. For example, we find from those tables that out of 100 individuals belonging to each class respectively, there died, during the 18 years from 1813 to 1830—

	Throughout all England.	In Lancashire.	West Riding of Yorkshire.	Hereford-shire.	North Riding of Yorkshire.
Before 5 years	34·8	44	39	24	25
From 5 to 9	06·5	08	07	05	05
10 — 14	04·3	06	05	04	04
15 — 19	05·8	08	07	05	06
20 — 29	14·2	17	15	12	13
30 — 39	14·3	18	15	11	11
40 — 49	16·4	21	16	12	12
50 — 59	20·8	25	21	16	15
60 — 69	34·3	38	36	29	27
70 — 79	59·3	63	61	53	52
80 — 89	87·5	88	88	85	84
90 — 99	95·5	94	97	93	95
Above 100.....	100·	100	100	100	100

The obvious inference from all this is, that at every period up to 80, the mortality falls considerably heavier upon the manufacturing counties than on all England in general, or on the agricultural counties in particular. And the same result becomes still more manifest, when we suppose 100 to be the number of deaths of all ages in England, taken collectively, and we reduce by the rule of proportion to this standard the amount of mortality at each age in the agricultural and the manufacturing counties.

I might easily cite a number of additional facts, but those already given may suffice, as I have instanced all England proper, two counties essentially manufacturing, and among the agricultural counties the first two that came to my hand. If I have left out Rutland among the latter, while I have placed its name at the head of the second list, it is not because the mortality of that county was unfavourable to my position (for it is in reality just the reverse), but because the Rutland table has been constructed on too limited a number of observations.

In short, what better argument could be tendered than that afforded by the data in the last table, in order to disprove the assertion that the mortality for ages subsequent to 2, in your manufacturing districts, is not higher than in others? and please once more to observe that those data are supplied by Mr. Rickman himself; they are given in his tables. The only question, therefore, that can possibly arise, is whether I have cited them faithfully. This being the case, *I* am either justified in the unfavourable account I have given of the short duration of life in the manufacturing districts, or Mr. R.'s data are incorrect.

où le fait important que je viens de montre se trouve exprimé pour chacune des catégories d'âges en lesquelles ces tables ont éte divisées. On y lit, par exemple, que sur 100 individus des mêmes groupes d'âges, il en est mort pendant les 18 années consécutives de 1813 a 1830, savoir :— [See Table in the Text.]

"Ce qui revient à dire que pour tous les âges, jusqu'à celui de 80 ans, la mortalité pèse notablement plus sur vos comtés manufacturiers que sur l'Angleterre prise en masse, et que sur vos comtés agricoles en particulier. Cela serait encore plus manifeste, si, supposant 100 la nombre des morts, nombre des déces de tous les âges dans l'ensemble de l'Angleterre, on rapportait à ce module par des règles de proportion la valeur de la mortalité de chaque âge dans les comtés agricoles et manufacturiers.

"Je pourrais multiplier ici les faits; mais il suffit, je crois, d'avoir cité avec l'Angleterre propre tout entière, deux comtés essentiellement manufacturiers, et parmi les comtés agricoles, les deux premiers venus. Si j'ai retranché de ces derniers le Rutland, dont le nom se voit en tête de l'autre tableau, ce n'est point parceque sa table de mortalité n'est pas favorable à ma thèse (elle l'est au contraire beaucoup), mais parceque cette table est fondée sur un trop petit nombre d'observations.

"Que pourrais-je dire, je le demande, qui vaille les proportions des décès aux différens âges données dans le dernier tableau, pour combattre l'assertion que pas-é l'âge de 2 ans la mortalité n'est pas plus forte dans vos districts manufacturiers que dans les autres? Et notez bien que, comme on l'a déjà vu, ces proportions sont de Mr. Rickman lui-même, qui les a écrites dans ses tables. Il ne s'agit donc plus que de savoir si je les ai fidellement reproduites. S'il en est ainsi, tout le mal que je signale dans vos districts manufacturiers, sous le rapport de la durée de la vie, est vrai, ou bien les chiffres de

There is no further room for discussion, except as to the explanation of the facts; and the following is what I said on the subject in my Analysis, at the end of paragraph vii.:—

"Whether it be to the extension of her manufactures or not, that we are to attribute the excessive mortality among the manufacturing population of England, or whether it be owing to concomitant circumstances, with which I have at present nothing to do, certain it is, that in England, and *in the actual state of things*, the offspring of the manufacturing part of the community becomes more rapidly extinct, drops off in a much larger proportion, than the issue of the manufacturing population."

It may be observed, that throughout the whole of this reply I have constantly entrenched myself behind the cyphers in the excellent and noble work of Mr. Rickman. I conclude by requesting him to believe that I am just as free from passion as I am from any interested motive regarding the question which has been raised. Like him, too, I have no aim, no wish, but for the truth; and such is my confidence in his enlightenment and his candour, that I leave it altogether to him to do justice between us.

Your most obedient servant,

L. R. VILLERME.

Paris, February 1835.

P.S.—Mr. Rickman's tables, like all other tables of mortality, assume that every individual registered in them was born in the locality for which they were drawn up: but emigration, which, it is certain, takes place chiefly at the expense of the agricultural counties, and immigration into the manufacturing districts, necessarily modify the results. The effect of the former is to render the amount of probable life and mean life less than it really is; at least up to those ages when emigation ceases: immigration, on the contrary, causes it to appear larger. Accordingly, when we calculate the amount of probable life and mean life for each county, on the data afforded by Mr. Rickman's tables, we find it very sensibly larger in the agricultural than in the manufacturing districts. This fact, on which Mr. Rickman himself has laid much stress in the Preface to the Abstracts, when comparing the North with the West Riding of Yorkshire, and with Lancashire, were alone sufficient to prove irrefutably that I am not wrong.

Mr. Rickman sont faux. On ne pourra plus discuter ensuite que sur l'explication des faits. Or, voici comme j'en parle dans mon analyse des trois volumes de documens officiels sur la Population Anglaise, à la fin du paragraphe VII.:—

"'Que ce soit ou non à l'extension des fabriques qu'il faille attribuer l'excessive mortalité des populations manufacturières en Angleterre, ou bien aussi à des circonstances concomitantes, ce que je n'examine point, toujours est il qu'en Angleterre, et *dans l'état actuel des choses*, les générations des populations manufacturières s'eteignent plus vîte, succombent en bien plus forte proportion, que les générations des populations agricoles.'

"On a pu remarquer que, dans toute cette réponse, je me suis tenu constamment retranché, si l'on peut s'exprimer ainsi, derrière les chiffres du grand et beau travail de Mr. Rickman. Je termine en le priant de me croire sans passion, comme sans intérêt, dans la solution de la question soulevée par moi. Comme lui, je ne cherche, je ne veux, que la vérité; et c'est à lui-même que je m'en rapporte pour la trouver et la dire, tant j'ai foi dans ses lumierès et dans sa conscience."

"Paris, Feb. 1835.

"*Post-Scriptum.*—Comme toutes les tables de mortalité, celles de Mr. Rickman supposent que tous les individus qu'elles comprennent ont pris naissance dans les localités pour lesquelles ces tables ont été dressées. Mais les émigrations qui, assure-t-on, se font principalement aux dépens des comtés agricoles, et les immigrations dans les comtés manufacturiers, en modefient nécessairement les résultats. L'émigration a pour effet de faire paraître la vie moyenne plus courtes qu'elles ne le sont reéllement, du moins jusqu'aux âges où cette émigration cesse, et l'immigration, au contraire, de les faire paraitre plus longues. Or, lorsqu'on calcule la valeur de la vie probable et de la vie moyenne, pour chaque comté, à l'aide des tables de Mr. Rickman, on les trouve très sensiblement plus longues dans les comtés agricoles que dans les comtés manufacturiers. Ce fait, sur lequel Mr. Rickman a beaucoup insisté dans la Préface des trois volumes in folio, en comparant le comté North Riding of York aux deux comtés West Riding, et Lancaster, serait seul la preuve irrécusable que je ne me suis point trompé."

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

Outlines of Comparative Anatomy. By R. E. GRANT, M.D. F.R.S.E. &c. Part I. Baillière.

ALL who attempted in vain to read the heavy course of lectures on Comparative Anatomy, lately reported in the Lancet, or who were loath to admit that publication into their libraries, will perhaps be glad to find that the substance,

the really useful part, of those lectures, has been collected by the author, and offered to the public in a more appropriate and convenient form.

We cannot, however, speak positively as to the merits of the present performance, until we see more of it. There are to be *four* parts, it seems; but as yet we have no preface, nor introduction, stating the author's views. The fasciculus now before us is, in fact, the barest specimen of Outlines we have ever seen. There is not a single note given in it; no bibliography; not an intimation, in short, that any body had ever written before on the subject, except Dr. Grant.

Some authors, we are aware, have a trick of never quoting, in order that they may appear to be so much the more original; but, unfortunately for them, it but too often turns out that they are in consequence themselves seldom quoted. In the case of Haller, it may be said that *his* Outlines are without references. But, beside that Dr. Grant is not exactly Haller,—the *Primæ Lineæ* is but a book of reference to the *Opus Magnum*, in which the bibliography and illustrative notes of every description abound. In a work on natural science, it is a great fault not to guarantee the *facts* therein stated by proper authorities. Neither Cuvier, Blumenbach, Carus, Otto, nor any other writer on such subjects, that we are acquainted with, have ventured to put forth their statements in so magisterial a form. Dr. Grant had better think of this in time: though we presume that all that can now be done in the matter is to *append* a bibliography and a posse of notes,—a proceeding much less calculated to give satisfaction than having them at the foot of each page, or at the end of each chapter.

In other respects, the author has acquitted himself with all that ability, which, in addition to his great attainments as a naturalist, render him perhaps the most competent person in England to write a manual on the subject.

This Part contains the comparative anatomy of the bones, ligaments, and part of the muscular system. It is neatly printed; and many of the woodcuts (of which there are sixty-five altogether) are well executed. We shall await the completion of the work with some anxiety for its success.

MEDICAL GAZETTE.

Saturday, March 7, 1835.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

THE JOINT-STOCK *UNIVERSITY*.

ONE advantage, at least, accrues to the public from the actual state of this establishment—namely, that as it is a purely mercantile speculation, in which many and various persons have a pecuniary concern, the accounts must be publicly audited every year: thus the boasting and pretensions of its managers are put to the proof, and no deception can well be practised. At the last general meeting of the shareholders, on the 25th ult., some important points came to light regarding the financial affairs of the year just expired. There was, it seems, an increase in the *receipts* of the school to the amount of 81*l.* 13*s.* 8*d.* But now hear the *per contra*: another mortgage is found necessary for the Valetudinarium; 2500*l.* must be raised forthwith in that way, in addition to the 4000*l.* borrowed not long since. The *ordinary* expenses of the year exceeded the estimate by 107*l.*, while the *extraordinary* expenses prove to be no less than 1218*l.* 16*s.* 9*d.*—of which 480*l.* have been expended in the vain attempt to procure a charter of an exclusive and an offensive description. We must confess we wonder not a little how these things are borne by the trading portion of the proprietary. That many of them are heartily sick of having had any thing to do with the "University," is abundantly clear; nor is it less evident, from recent proceedings, that they think they have risked quite enough in the good cause of "diffusing knowledge." A modest proposal made to them at the meeting above mentioned, by the great advocate, or *solicitor* rather, of the institution, put this to the test. Mr. Tooke threw out the suggestion that as

it was a main objection to the "University" that it was a joint-stock concern, and since the chance of getting 4*l.* interest on each share must, by this time, be considered by the majority of the proprietors to be *a desperate prospect*, —that therefore they might as well relinquish their shares altogether, and *endow* the school with the amount!

Some of the shareholders did not fail to characterize this proposition as it deserved. Colonel Stanhope, for one, was highly indignant, and boldly stigmatized it as a most "fraudulent proposal." It was finally scouted.

Yet the same Mr. Tooke who made this proposal is to bring forward another scheme on the 26th. He will make trial whether the House of Commons may not be induced to grant to the Gower-Street proprietary the power of recruiting their finances by the sale of degrees. A desperate effort is suited to a "desperate prospect," and we suppose it is with that impression that the active member is about to bestir himself.

PROPOSAL TO GRANT A MONOPOLY TO THE MEDICAL SCHOOL IN GOWER-STREET.

We beg to direct the attention of all those connected with the medical schools in London and the provincial towns, to the notice given by Mr. Tooke, of a motion to be made by him, in the House of Commons, on the 26th of this month. The proposal of that gentleman is, that Parliament should address his Majesty, praying him to confer a charter, with power to grant degrees in medicine, on the London *University*. If the honourable member succeeds, then may the other schools at once shut their doors, as a monopoly in teaching would be secured by the shareholders in Gower-Street. There is, however, no chance of his succeeding, unless through the over confidence and supineness of the teachers whose interests are at stake, many of whom think that because the act would be unjust, therefore it will certainly not be perpetrated. This we believe would be a legitimate inference, but that a large proportion of the members of the House of Commons are not aware of the true state of the case, and think that Mr. Tooke's proposal is the only measure by which the dissenters are likely to obtain relief on the subject of academic distinctions; and thus it comes to be regarded by those who are ill informed on the subject as a trial between the ministry and the opposition.

Petitions against Mr. Tooke's motion are already prepared at some of the principal schools; and we earnestly advise that this proceeding (which, by the way, does not, like the Memorial to the Privy Council, entail any expense beyond that of a sheet of parchment), be immediately adopted by all the others. The *Memorial*, which forms a good model for a petition to parliament, will be found in the Medical Gazette for April 26, 1834; and we further recommend, that every one who is acquainted with a member, particularly on the opposition side of the House, should make him acquainted with the merits of the case, as detailed in the document alluded to. By means such as the above this most impudent demand was thwarted before, and by the same means we have no doubt of its being so again—*but then the means must be used.* The "London University," it is to be kept in mind, is represented in the House by numerous shareholders,—the other schools, there is reason to fear, are *misrepresented.*

FRENCH MEDICAL APPOINTMENTS.

The vacancy left in the Hôtel Dieu by the death of Baron Dupuytren has been filled by M. Roux, while M. Velpeau occupies the place of the latter at La Charité.

MR. WAKLEY'S *DEBUT* IN PARLIAMENT.

Mr. Wakley, ambitious of attracting a little notice, must needs put some questions to Sir Robert Peel, the other night, touching the College of Physicians. Nothing could be more auspicious than the *début* of the *honourable* member for Finsbury, who contrived to elicit a confirmation of all the statements on the subject which have been made in this journal, and who had the satisfaction to get laughed at into the bargain.

MEETING OF THE MEDICAL STUDENTS IN EDINBURGH,

ON THE SUBJECT OF ANATOMY.

A printed report, in an official form, has been forwarded to this and, no doubt, to the other journals, containing an account of a meeting held on the 7th ult. by the medical students in Edinburgh, for the purpose of petitioning the House of Commons on the subject of the Anatomy Act. It appears that the working of the bill has been extremely defective in Scotland, and that some time ago the various schools remonstrated with the local authorities on the subject; but without procuring any redress, notwithstanding the crying evil of *two hundred* anatomical students having been arrested in their progress, from the want of any means of dissecting. This is certainly a lamentable state of matters, but it is one, we are fain to confess, which we do not expect to see speedily removed, as regards Scotland, owing to the strength of the popular feeling against the objects of practical anatomy.

Suffering under the grievance alluded to, it is natural that the students should exert themselves to obtain relief; nor is it to be wondered at, that in a meeting of seven hundred young men, the whole of their proceedings should not have been marked by absolute wisdom.

The first resolution which was passed on the occasion is unexceptionable—viz.

"That this meeting considers the present Anatomy Bill defective, inasmuch as it places no restraint on parochial authorities regarding the disposal of their unclaimed dead, and leaves them quite at liberty either to dispose of them as may best serve their own interest, or bury them if they choose to do so; and suggests that it should be be made imperative on all parochial authorities, superintendents of hospitals, infirmaries, charities, &c. to forward a notice to the Inspector of Anatomy, of their district, whenever a dead body lies in their possession, under such circumstances as are pointed out by the Act."

Nor have we any thing to object to the second resolution, except that it was introduced with a good deal of frothy flummery about the "meridian splendour" of science, the "blackening effect of corruption," and all that sort of thing; which last, considering that the subject related to dead bodies, was coming rather too close to reality to be quite agreeable. After an exhortation to the young gentlemen present, to "concentrate their energies to overthrow and destroy corruption wherever she *rears* (?) her diminished head, the following resolution was put and carried:—

"That this meeting deem it most unjust, that there should still exist an unequal distribution of subjects among the students attending the legally recognized classes of this town; and, moreover, urge the adoption of the principle acted upon in London and elsewhere, that subjects should be distributed according to the number of students attending each class."

Here, we regret to say, our commendation of the proceedings must terminate; and it is to be lamented that the parties had not the good sense and discretion to content themselves with what had been done. The next resolution was a censure upon the late Secretary for the Home Department; and various others equally foolish were subsequently proposed, some of which were adopted,

and others rejected. The business of the day was closed by an animated discussion between two gentlemen named Fidler and Potts, both of whom seem to have played their parts extremely well, as we are told that they excited "shouts of laughter." Unluckily we are not favoured with any of the good things, except one; but from it some idea of the scene may be gathered; while, at the same time, it will be rendered apparent on what sufficient grounds we have above expressed our regret that the meeting went beyond the second resolution.

"One spirited remark from Mr. Potts (says the official report), deserves being rescued from oblivion. It was in answer to the question, What use such a resolution could be of? 'I do not care about the use; what I want is, for this meeting to throw all its moral influence over the managers of the Royal Infirmary. *(Great laughter.)* It is no use laughing, gentlemen; those who know me are aware that I hold it as nought; while, for those that do not, I don't care a straw.' Mr. P. here dexterously (suiting the action to the word) *turned his body half-way round!* at the same time snapping his fingers, which feat elicited tremendous laughter."

We most earnestly hope that redress will be afforded; but what are we to think of the discretion of those who, in printing a copy of these proceedings for circulation, have included in their account the above piece of low, stupid, and coarse vulgarity, as "deserving to be rescued from oblivion!"

FORCIBLE SURGERY.

Our disinterested and impartial contemporary details, in his last number, the alleged particulars of a case in which a clergyman and surgeon are said to have conspired to subject a lad to the operation of lithotomy against his "urgent entreaties and reiterated remonstrances." The story is evidently trumped up for a purpose; but let that pass. We have here recorded, in black and white, the just horror of the virtuous Editor at any thing like force on such occasions. Suppose now that a case were to occur nearer home—in the very limited field of hospital practice which is open to his inspection;—suppose the operation forced upon the party did not involve life and health, as in the above, but merely touched a deformity, and afforded an opportunity for surgical display;—suppose that the party was not a young man, but a poor girl;—suppose that she struggled, and entreated—that she escaped, and was brought back by force;—suppose she declared that she was there unknown to her parents;—suppose she exclaimed that "*the money would be of no use to her;*"—suppose that, nevertheless, the operation was performed "against her urgent entreaties and reiterated remonstrances";—suppose but one tithe of this occurring, when and where it suited the purpose of our contemporary to denounce it, and how abundantly would the phials of wrath be opened! But suppose, on the contrary, it should occur when and where it did not suit his purpose to expose it?—why he would then do just what he has done—say not a syllable about it;—and if now, by our allusion, the subject be forced upon him, we dare be sworn he will declare that nothing of the kind ever took place. Such is the nature of some people's impartiality!

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Tuesday, February 24, 1835.

This evening the society met for the first time in their new apartments, in Berners-Street. The meeting was very fully attended. The appearance and accomodation of the new *locale* seemed to give much satisfaction: the library is large and handsome, and the whole suite of rooms, when well lighted, not a little imposing.

After the usual routine business, a paper was read by the President, entitled,

"*Observations on the Medicinal Properties of Kreosote,*" by John Elliotson, M.D. F.R.S., President of the Society.

It contained the results of various trials of krcosote in several kinds of intractable disease—in phthisis, cholera, diabetes, neuralgia, epilepsy—made partly in St. Thomas's Hospital, partly in private practice, in the course of the last eight or ten months; and possessed much interest, when considered as the first introduction to the British public of a new remedy, which is likely to prove an important acquisition to our Pharmacopœia.

After some prefatory observations on the importance of attention to the medicinal properties of drugs and chemicals, as a source of light and power in the cure of diseases, the author stated, that having his attention called, early in 1834, to the therapeutic properties of kreosote by reports from foreign sources, he had begun his experiments by administering it to patients whose cases were ascertained to be unmanageable by other means. He first tried it in phthisis and epilepsy, and afterwards proceeded with the inquiry in cases of neuralgia, cholera, diabetes, &c. He usually began with two or three drops suspended in watery mucilage, and gradually raised the dose to ten, twenty, or more drops, until the stomach would no longer tolerate increase; over-dosing producing nausea, vomiting, headache, vertigo, heat of tongue, fauces, and œsophagus. He found the remedy quite powerless in phthisis, in whatever form, or dose, or mode exhibited. When respired, however, he occasionally observed temporarily increased facility of respiration and expectoration, as, indeed, might be expected; for it cannot be doubted that tar fumes have in some instances proved useful, as in the hands of Crichton and others. He mentioned that in some instances of bronchorrhœa, or chronic catarrh, he had obtained excellent effects from its inhalation from a solution of five to fifteen drops in about a pint of water, repeated several times daily.

In epilepsy he found little effect of any kind; but from an apparently tranquillizing power which he thought he observed in it in that disorder in some instances in irritable subjects, he extended the use of kreosote to hysteria, neuralgia, and other forms of morbid excitability.

Case I.—A young girl, labouring under acute pain in the hypogastrium and pelvis, with various other nervous symptoms, and habitual obstinate constipation. At first the pain, &c. recurred irregularly, but at length every morning between seven and eight, and lasted till night, after which she lay comatose until morning. Her face, gestures, &c. expressed extreme suffering. The evacuations healthy; bladder free of calculus. Every known remedy had been tried before her admission into St. Thomas's. Three grains of morphia relieved her a little every morning, but was soon discontinued as unavailing. July 22d, ordered a drop of kreosote thrice daily. The dose was gradually increased to seven drops. She improved rapidly, and left the house well in a month, having meanwhile regained her flesh and looks.

Case II.—A man, ill of neuralgia of the nares and palate three months, suffered dreadfully from pain, with sympathetic contortion of the features. He had been ill three years previously, and recovered without remedies. He began with three drops of kreosote three times a day, August 22d. On the 28th he was taking six minim doses, and was better, the pain recurring less frequently, and his sleep being much less disturbed by its paroxysms. The dose was raised at length to eighteen minims, and he soon got well enough to wish to leave the house.

The author noticed two other cases still under treatment, in which the disease seems nearly cured.

During these experiments the cholera broke out in the hospital, and it occurred to Dr. E. to try the tranquillizing power of kreosote in that *opprobrium medicorum*. In two cases it was exhibited with the effect of stilling the vomiting completely, but without other advantage; these cases likewise proved fatal. They suggested, however, further trial of its anti-emetic power; and the result of his experience was, that he knew of no medicine at all to be compared with kreosote in arresting vomiting, against which he had repeatedly known it succeed after prussic acid had failed. It has proved in his hands equally powerful to arrest vomiting when present, and to prevent it when threatening. In dyspepsia also, characterized by pain, acidity, nausea, &c. he has found it very useful; but he has observed flatulence aggravated by it.

He was led to try it in diabetes, from having accidentally read an account of a case in which it had been successfully administered.

Case VII.—A country gentleman, of 60, ill four or five years with foul tongue, excessive thirst, and very saccharine urine, was ordered kreosote. On the 10th of September he was making water but seven times in twenty-four hours, instead of fifteen times as in August; his urine contained scarcely any sugar, and he felt himself quite well.

Case VIII.—A medical man (Nov. 8), ill eight months, made twelve quarts of urine, of specific gravity 1038, per day. Stomach excessively acid; bowels costive. He took kreosote. November 25th, spirits, strength, and general health, greatly improved, and his amendment altogether surprising.

Case IX.—A gentleman of 60, six months ill, making six quarts of water in twenty-four hours, of specific gravity 1037, took kreosote. Nine days after seen again; his health much improved. In December his thirst had disappeared, his urine come down to three pints, with proportional

general amendment; but the urine still of specific gravity 1037. He has since been heard of, and continues to improve.

Such were the facts of the paper, the incompleteness of which, to a certain extent, the author pointed out, but accounted for satisfactorily from the rarity of some of the diseases, and the novelty of the whole inquiry.

Annual Election of Officers.

On Monday last (2d instant) the officers of the Society for the year 1835-6 were elected. The following is the list:—

President.—Henry Earle, Esq. F.R.S.

Vice-Presidents.—H. S. Roots, M.D.; John Howship, Esq.; Robert Lee, M.D. F.R.S.; Herbert Mayo, Esq. F.R.S.

Treasurers.—John Bostock, M.D. F.R.S.; J. M. Arnott, Esq.

Secretaries.—John Clendinning, M.D.; Richard Partridge, Esq.

Librarians.—John Thomson, M.D.; William Coulson, Esq.

Members of the Council.—Sir James Macgrigor, Bart. M.D.; John North, Esq.; Sir Astley P. Cooper, Bart.; John Yelloly, M.D.; John Elliotson, M.D. F.R.S.; Neil Arnott, M.D.; Sir Benjamin C. Brodie, Bart.; Edward Stanley, Esq. F.R.S.; J. F. South, Esq.; Sir Matthew Tierney, Bart. M.D.

ST. GEORGE'S HOSPITAL.

OPERATIONS, WITH CLINICAL REMARKS,

By Mr. Cæsar Hawkins.

Case I.—*Contraction of the Fingers.*

Thomas Coffee, æt. 30, was admitted into St. George's Hospital, January 14th, under the care of Mr. Hawkins, in consequence of a deformity of the left hand, which seriously interfered with its use. The little finger was kept permanently contracted in the bent position, so that the back of the first phalanx was always presented to any object which he wished to grasp, the joint being directed towards the root of the thumb. There was a broad thick piece of skin and subjacent substance running from the centre of the palm of the hand half way down the first phalanx, and partially towards the second, the base of which in the palm seemed, when the finger was stretched, to have a narrow band, looking just like a flexor tendon in shape and size, running up towards the wrist, the extension of which caused a good deal of pain. The ring-finger was also partially contracted in the same way, but nothing like a tendon from this finger could be perceived connected with the palm.

This contraction had gradually taken place during the last five years; during which time nothing of any consequence had been done for him, and the inconvenience being now considerable, he wished it, if possible, to be relieved.

Mr. Hawkins ascertained, by moving the fingers in different ways, that there was no adhesion of the tendons, and that the contraction was in the fascia only, and determined to divide the contracted parts. Before operating, however, he gave the patient two doses of calomel and haust. sennæ, to prevent the inflammation which would otherwise probably ensue; and on the 22d he performed the operation, which he explained afterwards to this effect:—

The little operation which you have just seen, is one which, perhaps, you have not before witnessed, as it is very seldom done; partly because the disease seldom produces so much inconvenience as to induce the patient to submit to it, and partly because its nature is not well understood; for it is generally supposed to be a contraction of the tendon of the flexor muscle, and that its division would be very troublesome, from inflammation of its sheath, or that it would render the finger useless afterwards. It is an affection which I have, however, repeatedly seen, and it is remarkable that it almost always selects the little and ring-fingers, and consists in a slow inflammatory action in the fascia of the palm of the hand, going on for many years (in this instance for five years) before it produces very great contraction, and arising (as in this patient) without any known cause. The only description of it with which I am acquainted, is one by Dupuytren, who seems to have frequently operated for it on the principle which I have adopted here. The portion of fascia affected was that which comes from the annular ligament and divides near the base of the fingers, so as to embrace the sides of the little finger and one side of the ring-finger; and what I did for it was this. I first made an incision, about three-quarters of an inch long, in the centre of the palm, across the base of that portion of fascia which went to the fingers, and which started up when it was stretched, so as to look like a tendon. This being divided, a good deal of room was at once gained, and you saw the fat and nerves of the fingers at the bottom of the incision. I next made a semicircular incision more than half way down the little finger, at the fold which joins it to the palm of the hand, down to the tendinous sheath in the centre, and just avoiding the artery and nerve on each side. I next divided, in the same way, the side of the ring-finger next to the little finger; so that by these incisions the portions of

the fascia inserted into the fingers were divided, and the fingers could be extended almost to their natural length, allowing only for the shortening of the flexor muscle and tendon in five years, and which will, no doubt, soon yield. I also made an incision, in a longitudinal direction, through the thick substance formed by the skin and fascia together, which was there more than half an inch thick, thinking that this might, perhaps, allow more easily of extension. I gained nothing, however, by it, unless it facilitates, by suppuration, the removal of this hard substance which has been formed by the continuance of the disease. I have placed (as you saw) a little lint in each cut, and have directed it to be placed on a splint, to keep the hand at rest, as there will perhaps be some inflammation from opening the fascia, and to keep the fingers stretched; which it will be necessary to do, even after the wounds have healed, for some time each day, or at night.

Jan. 27th.—The wound being dressed, was found to be suppurating well; and there was no inflammation or swelling, such as might reasonably have been anticipated.

Feb. 20th.—The incisions have quite healed and the fingers are perfectly straight; so that there is every reason to suppose that he will regain the perfect use of his hand, all the fingers of which are a little stiff at present, from the use of the splint. The last few days, however, the splint has been left off, and the flexion of the fingers is improved. Almost the whole of the thick mass formed by the contraction has disappeared, and he has as much power over the fingers which were operated upon as any other.

CASE II.—*Large Nævus of the Cheek.*

Frederick Yeo, æt. 18, admitted Jan. 14th, under the care of Mr. Hawkins, in consequence of a large nævus of the left side of the mouth and cheek, which produces so unsightly an appearance that he has never been able to procure a situation as a servant. The tumor began at his birth, but has lately increased a good deal.

The tumor forms a thick dark-blue mass, which, if pressure be made upon it, or the breath be retained, projects considerably at the left angle of the mouth. It is chiefly seen through the mucous membrane, which is extensively implicated; and just at the angle the outer skin has lately begun to have a red appearance, from diseased vessels forming in it, to the extent of nearly an inch. The tumor, when examined on the inside of the mouth, is seen to be about four inches long by two broad, and when the vessels are full, it is nearly two inches thick, and gives a sensation of a great number of varicose vessels under the membrane. It has no pulsation, and does not seem to have occasioned any increased action in the vessels around.

Jan. 22d.—A method of cure was commenced, which was explained to the students present, by Mr. Hawkins, to this effect:—

After mentioning the nature of the disease, he observed that the most effectual method of treatment was to remove such tumors completely, which was done either by the knife or by the ligature. Either plan was possible in the present case; but I have not thought it right to employ them. I might have cut out the whole tumor, but it is so extensive—reaching even to the gums at its lower part—that there would have been great danger from hæmorrhage, as the vessels composing it, being in a diseased state, and having no contractile power, bleed to an immense and fatal extent if not cut across; and if I had succeeded in avoiding this by completely getting around the tumor, yet so much of the cheek must have been removed, that the edges could hardly have been brought together, or at the best, not without very great deformity. On account of its danger, then, the knife is scarcely ever used; and whenever it is practicable, the tumor is removed by ligature,—an operation which you frequently see in the hospital. I might have used the ligature in some form or other, so as to have destroyed this tumor, but the deformity produced by it must have been very great—more, perhaps, than by the knife.

For similar reasons I have not attempted to destroy so large a tumor with caustic, which is sometimes used for this purpose; besides which, there is some risk of hæmorrhage from this method, and it is very painful and tedious.

If such a tumor is not removed, another method of treatment, which is sometimes used with success, is the obliteration of some of the diseased vessels by the production of inflammation. In some situations this can be done by constant pressure; but of course this is out of the question on the cheek, or indeed with any large tumor. Sometimes inflammation is excited in a young child, by making a number of punctures to inoculate the surface with vaccine matter; the method occasionally succeeds; yet it seldom answers with large nævi. Another plan which has been recommended is the use of a seton running through the tumor; and lastly, the production of inflammation, on the principle which I have just employed, and which you have seen me use also for the treatment of common varices of the ankle. You saw me use a narrow-pointed knife, cutting on its edge: an iris knife in shape, but a little larger, answers the purpose.

This I passed through the skin at one margin of the tumor, and ran it under the skin to the angle of the mouth. I then drew it forcibly towards me, turning the edge towards the mouth; my fingers in the mouth regulating the force of the incision, so as not to cut through the inner membrane. By this I endeavoured to cut through the vessels which form the tumor, and I repeated the same incision in eight or ten other directions. You saw that no blood escaped externally, but the tumor became larger, from effusion within its structure; and I hope that by the coagulation within it, and the inflammation excited by the operation, the increase of the tumor may be checked, if it does not disappear. I conclude that the incisions will have to be frequently repeated before much good can be effected. If it fails to do any good, I shall probably pass a seton through it; but as the seton hanging out of the mouth, to avoid a scar, would be a dirty and disagreeable plan, I have first tried the present incisions.

Some little inflammation and pain took place; but the coagulum appearing to be nearly absorbed, Mr. Hawkins made some more incisions on the 31st, and again on the 10th and 17th of February, the effect of which has been an apparent diminution, to a small extent, however, and chiefly at the upper part of the tumor. During the incisions the vessels seem to be very tough, and to escape sometimes from the edge of the knife; but some appearance of bruise, and of swelling, shews that some of them are cut across each time.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

At a meeting of the College, held on Thursday, February 26, Dr. H. Maunsell, (author of the Dublin Practice of Midwifery,) was elected Professor of Midwifery and the Diseases of Women and Infants, in the room of Dr. Johnson, resigned.

COLLEGE OF SURGEONS.

LIST OF GENTLEMEN WHO RECEIVED DIPLOMAS IN FEBRUARY 1835.

J. Thomas Harland, Ashbourne.
M. David O'Connell, Kilmarnock.
Rich. Inaffatt, Monaghan.
Wm. Deakins, Bristol.
R. Sturley Munn, Colchester.
John Hawkins, Peckham, Surrey.
Alexander Montgomery, Belfast.
F. Hutton Hill, Bath.
Jas. Rodgers Williams, London.
Jas. Morris, Vincent-Square, Westminster.
Maurice Dyte, Houndsditch.
Wm. Hibbert, Army.
J. Nicholls Stevens, Penryn, Cornwall.
C. Burton Dashwood, Yarmouth.
Brook Fishley, London.
Wm. Henry, Hull.
Henry Davenport, Egham.
Robert Barker, Rochdale.
T. Lewen Marsden, Leeds.
John Chapman, Stoneleigh, Warwick.
John Baird, R N.
H. P. Lewis Drew, Gower-Street, London.
T. Caverhill Jerdan, E.I.
H. Foote Ling, Stogumber.
A. Ed. Webber, Wellington.
R. Chas. Bidden.
Chas. Lingen, Hereford.
A. F. Carpenter, New Ross, Wexford.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

February 26, 1835.

Edward Joseph Staples, Bristol.
George Connolly Cone Lunn, Tiverton, Devon.
John Gorham, Tunbridge.
Alfred Locheé.
George Tomkins George, Bath.
Thomas Chandler, Devizes.

March 5th.

John Lower Clark, Devonport.
Parker Margetson, Kirkby Stephen.
John Jackson, Whatton, Notts.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *March* 3, 1835.

Abscess	6	Inflammation	43
Age and Debility	42	Bowels & Stomach	1
Apoplexy	4	Brain	3
Asthma	18	Lungs and Pleura	9
Cancer	5	Insanity	2
Childbirth	3	Liver, diseased	5
Consumption	50	Measles	15
Convulsions	35	Mortification	3
Croup	1	Paralysis	5
Dentition or Teething	9	Rheumatism	1
Dropsy	14	Small-Pox	15
Dropsy on the Brain	15	Sore Throat and Quinsey	2
Dropsy on the Chest	1	Spasms	3
Erysipelas	3	Thrush	1
Fever	7	Tumor	1
Fever, Scarlet	7	Unknown Causes	10
Gout	4		
Hæmorrhage	1	Stillborn	12
Hooping Cough	27		

Increase of Burials, as compared with the preceding week . . . 70

METEOROLOGICAL JOURNAL.

Feb. 1835.	THERMOMETER.		BAROMETER.	
Thursday . 19	from 29	to 43	29·40	to 29·37
Friday. . . 20	37	47	29·28	29·25
Saturday . 21	30	45	29·16	29·34
Sunday . . 22	39	48	29·30	29·20
Monday . . 23	35	51	29·17	29·34
Tuesday . 24	32	46	29·48	29·62
Wednesday 25	33	49	29·66	29·46

Prevailing wind, S.W.
Rain fallen, 1 inch and ·425 of an inch.

NOTICES.

The letter on Medical Reform has been returned to our publishers.

The review of Mr. Dermott's Anatomy is also declined. We beg to inform the writer, that we never give insertion to articles of such a nature without knowing the parties from whom they proceed.

WILSON & SON, Printers, 57, Skinner-St. London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, MARCH 14, 1835.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture XXIV.

DISEASES OF THE PERICARDIUM.

The pericardium is a fibrous membrane enclosing the heart: it is lined by a fine serous membrane, which is afterwards reflected over the surface of that viscus, and the origin of the great blood-vessels arising from it. This serous membrane secretes a limpid fluid for the purpose of lubricating the inner surface of the pericardium and the external surface of the heart, by which the movements of these parts upon each other are facilitated.

The diseases of the pericardium bear a great analogy to those of the pleura; for, like the latter, they almost all have for their results an alteration in the nature of the serous fluid secreted. These diseases are as follows:—

Pericarditis { Acute. / Chronic.
Hydro-pericarditis.
Pneumo-pericarditis.
Adventitious deposits.

Pericarditis.

By pericarditis is meant an inflammation of the serous membrane lining the pericardium and covering the heart: it is divided into two forms—*acute* and *chronic*.

Acute Pericarditis.

Morbid anatomy.—This part of our subject may, like pleuritis, be considered in reference to the following stages:—1st, redness; 2d, effusion; 3d, formation of false membrane; 4th, conversion of false membrane into cellular tissue, or fibro-cartilage.

1*st Stage.—Redness.*—The redness of the serous membrane is rarely considerable; it generally appears irregularly disseminated in spots, points, or stains upon its surface; but, as I have mentioned in speaking of the red stage of pleurisy, these forms are probably mere post-mortem results, depending upon the partial transudation of blood through the inflamed vessels, so that during life the red colour was more universally diffused. The serous membrane itself is not thickened during this stage.

2*d Stage.—Effusion.*— Soon, probably a few hours after the red stage has commenced, effusion takes place from the inflamed surface. This effusion is limpid, of a slight fawn or straw colour; sometimes it is slightly reddened; occasionally a few fragments of half-concreted albumen float within it, but these are rarely sufficient, in the early period of the disease, to produce a milky or troubled appearance. The quantity of fluid varies; it may be but very small, or there may be a pint or more. Corvisart once met with as much as four pints.

3*d, Formation of false membranes.* — A semi-concrete albuminous false membrane is soon deposited after the effusion has commenced. It usually covers the whole surface of the heart, the origin of the great blood-vessels, and the inner surface of the proper pericardium. This pseudo-membrane rarely presents a smooth appearance, although there are two or three preparations on the table which are of that character; but it is usually reticulated, irregular, unequal, or papillated.

The consistence of the albuminous deposit is slight at first—it is scarcely that of half-boiled white of egg; it afterwards becomes more concreted, and finally ac-

quires a greater firmness and thickness than the false membranes which form upon an inflamed pleura; it adheres also with great tenacity to the serous membrane beneath. Its colour varies from a light whity-brown to that of pus.

The comparative quantities of serum and false membranes vary considerably; generally there is infinitely less serum, in proportion to the false membrane, in pericarditis than in pleurisy or peritonitis. Often in intense pericarditis there is scarcely any serous fluid, whilst there is a large quantity of thick and concreted albuminous matter occupying the space between the heart and pericardium. In this case, it is probable that the thinnest portion of the serum is absorbed, and that the albuminous substance with which it is charged becomes deposited.

When pericarditis occurs, it generally attacks the whole surface of the serous membrane lining the proper pericardium, and covering the heart and its great blood-vessels. The disease is rarely partial; when it is so, the anatomical characters are nearly the same; the serous effusion is then occasionally as considerable as when the inflammation is universal; usually, however, it is less abundant. The false membrane generally covers the inflamed parts only.

4th, Conversion of false membranes into cellular tissue, or fibro-cartilage.—Nature frequently effects the cure of this disease in precisely the same manner as she does that of pleurisy. If the opposed membranes be thin, they gradually approximate as the serum between them becomes absorbed; films of concrete albuminous matter then pass from one false membrane to the other: these films gradually become vascular and organized, being at first soft and opaque, and finally firm and transparent, assuming altogether the anatomical and physiological characters of cellular tissue. If, on the other hand, the pseudo-membranes be thick and firm, then also, as the interposing secretion becomes slowly absorbed, their surfaces approach, unite, and form, in the same manner as in pleurisy, a single fibro-cartilaginous membrane, of a thickness proportionate to the elementary membranes which by their union have formed it.

Chronic Pericarditis.

Morbid anatomy.—This form of the disease always affects the whole surface of the serous membrane, which is then highly reddened in the form of small spots, or stains, closely approximating to each other. Laennec considers that chronic pericarditis is rarely accompanied by pseudo-membranous formations, or that when they exist, they are softer, and similar to a layer of thick pus. There is always a lactescent secretion present, which ultimately becomes puriform. He believes, also, that the intimate adhesion of the pericardium to the heart is the result of chronic pericarditis, while the cellular union depends upon the acute disease.

But it would be, perhaps, more correct to consider the red stage of pericarditis, when accompanied by acute and sudden symptoms, as the *acute* form alone; and the disease would be more properly called chronic soon after the serous effusion has occurred, or at least when the albuminous matter separates to form the false membranes; for after that period, the changes in the colour, consistence, &c. of the serous fluid, and of the false membrane, and the mode of their union, vary exceedingly: sometimes they will present all the appearances described under the head of acute pericarditis, sometimes all those mentioned of the chronic disease. It appears to me that Laennec has erred, in considering the above characters as conclusive of pericarditis originating in the chronic form, when they are, perhaps, almost as frequently the consequences of acute inflammation. I have already made some observations upon this subject, in describing acute and chronic pleuritis. I have there also detailed some opinions relative to the formation of false membranes upon the serous surfaces: the same observations apply here. I shall not recapitulate them, but refer you to the lecture on Pleurisy.

In many cases of pericarditis, particularly when it has arrived at the chronic form, the substance of the heart itself becomes discoloured and whitened, as if it had been macerated for some time in water. This appearance is often united with a softening of its tissue. This discolouration and softening has been attributed by some authors to inflammation of the muscular fibres; but pus has never been seen among them, and therefore this opinion remains problematical.

White stains on the surface of the heart.—Those who are frequently in the habit of making post-mortem examinations, often find upon the surface of the heart, not otherwise affected, substances of a whitish colour, opaque, and varying in size from a shilling to that of the palm of the hand; they are about a line in thickness, and have somewhat the consistence of soft cartilage. It appears they are placed upon the surface of the serous membrane investing the heart, for they may be removed without destroying it. It is a question whether this appearance depends upon a partial pericarditis forming a false membrane, afterwards converted into condensed cellular tissue, or not: Laennec inclines to the former opinion; but why are not these bodies found also subsequent to inflamma-

tion of the serous membrane lining the fibrous pericardium, or on the pleura and peritoneum?

Signs of pericarditis.—Acute pericarditis.—This disease is almost always accompanied at its commencement by severe inflammatory fever; but its local and functional signs are certainly more irregular and equivocal than those of any of the diseases of the heart, for sometimes they may present themselves in their exquisite form, and yet the pericardium be intact; in other cases, the disease may be perfectly formed, and yet produce no symptoms.

When the symptoms present themselves, they vary also exceedingly in their duration, intensity, and succession. Sometimes the disease runs a rapid course, and death is the consequence after the most agonizing distress; at other times the symptoms may be slight and chronic. The symptoms also do not, as in pleuritis, indicate the particular anatomical stages of the affection with any certainty, nor are they the measure of the degree of lesion to which the pericardium is subjected. Let us, however, examine these signs.

Pain often takes place in the region of the heart, and it is increased by inspiration and coughing. Dr. Hope observes, that it is aggravated by pressure on the precordial ribs, and by forcing the epigastrium upwards on the left side: these latter circumstances occasionally may be produced, but certainly not invariably.

Palpitations most frequently occur, consisting of impulsive ventricular contractions, succeeded often at intervals by shorter and feebler pulsations: this sign is often accompanied by syncope or lypothymia. The *pulse* usually bears a relation to the regularity or irregularity of the beatings of the heart, but frequently none to the force of its movements: thus it may be full, hard, and jerking, conveying a thrilling vibration to the finger, or it may be very feeble. Corvisart believed that the pulse gradually increased in irregularity from the commencement of the disease; but there is no doubt that, at the earliest period of the affection, it is often as intermittent, irregular, and thready, as towards the termination.

Dyspnœa is rarely absent; it is often extremely great, so that patients can scarcely breathe in a horizontal position, but you find them generally in the upright posture. I have seen them in this state of orthopnœa for many days, and even weeks. If this sign be severe, the uneasiness, distress, and jactitation, become incessant; the face assumes a livid hue, and swells; the extremities and trunk even become œdematous; the cerebral functions are also disturbed; slight delirium or constant sleepiness takes place, although positive repose is rarely obtained. A slight dry *cough* occasionally co-exists with the dyspnœa.

The patient sometimes complains of heat and weight about the heart, but these signs are frequently absent.

Upon the application of the stethoscope to the region of the heart, the impulse of the movements of the organ are almost always felt to be increased: that impulse is not regular, for after them feebler movements frequently follow, to be succeeded by stronger. The *bruit de soufflet* is also frequently heard during the contractions or dilatations of the ventricles.

When I first met with the bruit de soufflet in a case of pericarditis, I confess I was much surprised; for I saw no relation between the causes which usually produce that sound and inflammation of the pericardium. The known causes of the *bruit* are obstructions at the orifices of the heart to the current of the blood, and what are called nervous causes: the first being distinguishable from the second, by organic lesions rendering the bellows-sound permanent, and the nervous of temporary duration.

Finding, however, that in many cases of pericarditis there was no bruit de soufflet, I was led to suppose that in those cases of the disease in which it was permanently formed, it was probable that organic lesions of the valves, or dilatations and contractions of the aorta, with their consequences upon the structure of the heart, might have existed before the pericarditis; and upon a most minute inquiry into the history of the patients thus affected, I found that the greater number of them, particularly children, were never considered by those around as perfectly healthy individuals, but that they had always been subject to dyspnœa or palpitations upon that degree of active exertion or movement which upon healthy persons of the same age would produce no such effects. It is probable, therefore, that if these individuals had been examined before the pericarditis had occurred, the bruit de soufflet would have been found.

I examined not only all my own preparations of inflammation of the pericardium, but also, by the permission of my excellent friend Mr. Langstaff, all those, and they are numerous and complete, contained in his museum. I divided them into two series; in the first I placed all the cases of pericarditis in which the heart was of its normal proportions: in these the valves were not diseased, and I presume there had been no bellows sound; in the second series I arranged all the cases of inflammation of the pericardium in which the hearts were of large proportions; and in all these there were obstructions at

the mitral orifice, or diseases of the aortic valves, or enlargement or diminution of the ascending aorta. In these cases a permanent bruit de soufflet must incontestibly have been present.

I would consequently infer, that when a bellows sound exists throughout the progress of pericarditis, that it arises from the organic causes which usually produce that sound, and not from inflammation of the pericardium. I may add, also, that it is extremely probable that enlargements of the heart, by compressing the pericardium, must strongly predispose that membrane to inflammation.

To elucidate the cause or causes of the bruit de soufflet when it co-exists with pericarditis, I propose to you the investigation of the following points.

1. To ascertain, post-mortem, when the bruit has been permanent through the course of the pericarditis, whether the heart or its orifices are of the normal proportions, because if they are, then the sound must have depended upon the inflammation of the pericardium; if they are not, it was the consequence of disproportion.

2. To determine in those cases of pericarditis in which the bellows sound is not heard, whether the heart and its orifices are of their natural size, because if they are, the absence of the bruit is explained by the absence of its usual organic causes.

3. To examine whether, after all the signs of pericarditis have disappeared, the bruit de soufflet continues; if it does not, we must infer that it was caused by that disease only; if it does, that it depends upon obstructed cardiac orifices.

4. The bruit de soufflet sometimes coincides with the diastole of the ventricle, and sometimes with the systole. There is no reason at present known why this irregularity should occur, if it depended merely upon pericarditis; examine, therefore, post-mortem, whether these variations are not found to correspond with the lesion of a particular set of valves only.

When the union of the false membranes has been so effected as to cause, by their intermedium, adhesions between the pericardium and the heart, it has been supposed by Meckel that the pulse is then habitually small, and by Laennec and Vieussens, that palpitations are the constant results. Dr. Sanders supposed, also, that a depression or hollow was formed at the epigastrium under these circumstances. None of these signs are to be depended upon as indicative of adhesions. I have seen the pericardium united with the heart by a thick and cartilaginous false membrane, without any lesion of the functions of the organ.

There is no single sign which can be considered as pathognomonic of any stage of pericarditis; nay, the union of them all is insufficient to express the certain presence of the disease; yet by the examination of the abdominal organs and the lungs, certain negative circumstances tend to render the diagnosis more certain.

Thus the most certain symptom of pericarditis is dyspnœa. Now dyspnœa can only arise from diseases of the lungs and pleura, from affections of the heart and pericardium, or from lesions of the organs contained in the abdominal cavity preventing the free play of the diaphragm. Examine, then, the abdomen, and you will readily detect any intumescence sufficiently great to prevent the descent of that muscle; next, examine the lungs most carefully, and note whether there is sufficient disease there to account for the dyspnœa. If there be no abdominal or pulmonary disease, or the latter be so slight as to bear no proportion to the dyspnœa, then it must be inferred that the cause of the difficulty of breathing arises from some disease either of the heart or pericardium. The question will now be to determine whether the heart be diseased or the pericardium inflamed; the latter affection may be affirmed to be present when the attack is sudden, when there is inflammatory fever, when the pain and burning sensations occur in the cardiac region, when there are sudden palpitations of the heart, and especially when these signs have supervened upon a general attack of acute rheumatism. After all, gentlemen, you must not consider this accumulation of symptoms as *perfectly* diagnostic, as affections even of the head have been seen to simulate this disease; yet I have most commonly found that they have been sufficient to establish a correct diagnosis.

Treatment of pericarditis.—During the first few days, when inflammatory fever and pain exist, the disease should be treated precisely after the plan proposed in the first stage of pleurisy; bleeding, leeches, and cupping, should be employed proportionate to the intensity of the disease and the power of the patient. Mercury is also a most important remedy, and should be freely given from the commencement; and the antiphlogistic plan is to be strictly enforced. I refer you to the treatment of acute pleurisy, as it is unnecessary to recapitulate it here.

When, however, some days or weeks have passed, so that the disease assumes the chronic form, your indication is to cause absorption of the effused fluid; but that is rendered difficult, from the inorganic nature of the false membrane by which that function has to be performed. Mercury, carefully administered in this stage, so as not to excite salivation, but

rather to keep the mouth tender for two or three weeks, is the most efficacious remedy. I would recommend you to use the same method, with the precautions I have given in using mercury, for the treatment of chronic hepatization of the lungs. You will find, also, that counter-stimulants and exutories are often of great service; as blisters, setons, &c.

Hydro-pericarditis.

By hydro-pericarditis we mean an accumulation of serous fluid, in greater or less quantity, in the bag of the pericardium. This disease, like hydrothorax, may be symptomatic or idiopathic; the latter form is, however, rare; the preceding very common. Slight serous effusion is often a mere cadaveric result, or it is a consequence of the agonies of death. Symptomatic hydro-pericarditis is usually combined with general infiltration in the serous cavities and cellular tissue of the rest of the body. In the idiopathic form, the effusion is confined to the pericardium.

The effused fluid is sometimes colourless, but most frequently it is of a slight fawn, straw, or ruddy tint; it rarely presents a reddish aspect. Its quantity varies from an ounce or two to two or three pints; Corvisart had seen as many as eight pints. The heart and pericardium are usually free from any alteration in this disease.

Signs of hydro-pericarditis.—Various signs have been given of hydro-pericarditis, although none of them are pathognomonic; thus, according to Lancisi, there is an enormous weight at the precordial region; others have stated that the patient has felt his heart as if swimming in a fluid; Senac mentioned that he had seen the movements of the fluid in the intercostal spaces between the third, fourth, and fifth ribs; and Corvisart asserted that he had felt its fluctuation. The last author gives the following signs of this disease: — Sensation of weight at the precordial region, which region gives a dull sound on percussion. The beatings of the heart are felt to a considerable extent; they are to be distinguished at certain moments better at one point than at another, and this point varies every instant, being sometimes at the right side, sometimes at the left. These movements are also tumultuous and obscure, and seem to arrive at the hand through an interposed soft body; the pulse is frequent, small, and irregular; the extremities, and the integuments over the region of the heart and the trunk, are infiltrated with serum; the patient cannot bear the upright posture for an instant; he experiences frequent syncope, but rarely palpitations.

These signs are as uncertain as those of pericarditis. Much assistance may be given in determining this disease by observing the state of the lungs, to ascertain whether they present sufficient disease to account for the great dyspnœa.

Treatment of hydro-pericarditis.—The treatment of this disease should be precisely the same as that for hydrothorax and œdema pulmonum; I refer you, therefore, to those subjects. It has also been proposed to puncture the pericardium, for the purpose of evacuating the fluid; but I have so little confidence in the signs of this affection, that I have never ventured to recommend that operation.

Pneumo-pericarditis.

By this expression is meant an aeriform effusion developed in the pericardium. This effusion is often found at the examination of bodies in whom the process of putrefaction has commenced; but it is occasionally also found when it must have existed during life. In the latter case, it is accompanied by liquid secretions, although sometimes the pericardium is found distended by air alone. Laennec asserts that air and liquids may be developed in the pericardium a short time before death, and that he has been enabled to announce that event by the sound on percussion being clearer and louder over the cardiac region, or by a fluctuation corresponding to the beatings of the heart, or to a strong inspiration. He believes, also, that when the pulsations of the heart are heard at a distance from the patient, that it depends upon a sudden deposition of air in the pericardium, which is as suddenly absorbed, producing no distressing symptoms. I have met with several instances in which these pulsations were heard at a distance, but the patients presented no signs of disease either of the heart or pericardium.

Accidental productions developed in the thickness of the parietes of the pericardium.—Bonetus, in his Sepulchretum, mentions instances of the development of tubercles, cysts, and cancerous tumors, in the pericardium. Mr. Langstaff has a preparation shewing a number of tumors presenting the characters of medullary sarcoma, placed upon the serous membrane covering the heart. Ossific deposits have also been seen formed between the membranes of the pericardium; these ossifications vary considerably in thickness and extent.

Polypi.

Before we proceed to the consideration of the diseases of the large blood-vessels, let us first study the characters of the sanguineous concretions that are frequently found in the cavities of the heart, and which have been called polypi.

Upon making an anatomical examination of the heart, you will often find that its cavities contain coagula or concretions, varying in size, colour, and density. These coagula were supposed to give rise to symptoms which we now know to depend upon hypertrophy or dilatation of the organ. Similar concretions are occasionally found also in the large blood-vessels. These polypiform substances form either during life, or during the last moments, or immediately after death.

The left carotid artery, and the left internal jugular vein, have been seen obstructed by coagula by Haller. I have seen coagula extending considerably up both carotids. Haller had seen the inferior cava similarly obstructed, between the giving off of the renal and iliac veins. Laennec saw the inferior cava contracted and obliterated to the breadth of four fingers, by a whitish, fibrinous concretion, completely filling the vein; its external layer, strongly adherent to the internal parietes of the vessel, was exactly similar to the inflammatory crust of the blood, but of a firmer consistence. The internal layers were of a yellowish colour, perfectly opaque, and like the decomposed fibrine sometimes found in large aneurismal sacs. Other concretions have been observed more or less red coloured, especially in their interior; and these have not so completely filled the vessel but that the blood has been enabled to flow, although with difficulty.

These coagula must have formed during life; and it is extremely probable that the same thing takes place in the heart, especially in individuals who are struggling with death for a considerable period, and in whom the circulation is carried on with irregularity. Many authors have noticed these facts, and have recorded them, as Bertin, Bouillaud, Laennec, Burns, Velpeau, &c. It is now generally admitted that some of these concretions are formed before, and some after death.

The polypus which forms in the heart after death, and is consequently the most recent, consists of a slightly whitish, or yellowish, opaque and semi-transparent layer, like the inflammatory crust of the blood, enveloping a coagulum of blood; this layer is never complete, but only partially surrounds the clot. It does not adhere to the parietes of the heart, or to the vessel in which it may be inclosed. This concretion is sometimes firmer and thicker, and forms an isolated mass. When the blood is very thin, it is semi-transparent, less firm, and trembles like jelly; it has no fibrous texture, and appears infiltrated with serosity.

The polypi which form during life are much firmer than the preceding, having nearly the consistence of muscular fibre. They adhere more or less to the parietes of the heart; and that adhesion is often considerable when they form in the sinuses of the auricles, or in the ventricles, in consequence of their interlacement with the carneæ columnæ, which latter are often even flattened by their pressure. These concretions are opaque; their texture is fibrinous; they are of a pale, fleshy, or violet colour, different shades of which often exist in different parts of the same concretion. Sometimes an isolated clot of blood is found in their centre, and stains of that fluid upon its surface are seen plunging more or less deeply within. Laennec believes that these polypi may become organized, and that the vegetations I have already described are the forms which they then assume. These polypi are most commonly found in the right auricle and ventricle.

There are other concretions occasionally found, which must have formed some time before death. They are adherent to the parietes of the heart, and can be generally detached only by scraping them with a scalpel. Their consistence is less than that of the preceding species; they are not fibrinous, but are somewhat similar to a dry paste, or to the decomposed layers found in aneurismal sacs. These have been discovered only in the auricles and their sinuses.

Signs of polypi.—The signs of polypi of the heart are very obscure. Laennec believed that, when they had arrived at a certain volume, they would be indicated by the following symptoms:—

When, in an individual whose heart has hitherto pulsated regularly, its beatings become suddenly anomalous, confused, and obscure, so that they no longer admitted of analysis, a polypus may be suspected. If this derangement occurs only on one side of the heart, its presence may be considered as almost certain. Thus, when in exploring the heart at the inferior part of the sternum its beatings are found to be confused and tumultuous, whilst they were regular a few hours before, a concretion may be suspected to have formed in the right cavities, especially if the movements of the left side of the heart are still distinctly heard.

DISEASES OF THE LARGE BLOOD-VESSELS.

1. *Inflammation of the Inner Membrane of the Heart and Arteries.*

I shall, in the first instance, describe the various appearances which occur on the inner surfaces of the heart and arteries, and which have been supposed by some authors to arise from inflammation of their lining membrane, although denied by others.

1. *Redness of internal membrane of heart and arteries.*—The interior of the aorta and pulmonary artery is often found uniformly reddened, as if tinted by the blood they contained: this redness may be of a scarlet, or brown, or violet shade.

The scarlet colour is usually confined to the internal membrane of the heart, aorta, and pulmonary artery, but sometimes it penetrates through the fibrous even to the cellular coat of the arteries. This tint is uniform, some points being only deeper coloured than others; there is no arborescent appearance of injected capillaries. Sometimes the colour gradually diminishes in its intensity, from the origin of the vessel to where the tint is lost; at others it ceases suddenly, forming irregular, although strictly defined, edges. Occasionally, in the midst of a red surface, a circumscribed white spot is seen, as if the blood had been pressed out by the point of the finger. When there is but little blood in the aorta, the red colour exists only where that fluid is in contact with the vessel. The origin and arch of the aorta are most frequently reddened; the whole of the arteries are rarely so. The mitral and aortic valves appear as if they had been plunged into a red tincture, and their colour is generally deeper than that of the arteries.

When the pulmonary artery is thus affected, its valves and the tricuspid are generally in the same state.

The valves are occasionally coloured when the internal surfaces of the heart are not; but when the latter are also affected, the aspect of the valves presents a still deeper hue. Sometimes these surfaces are tinted of a deep red, whilst the valves remain of their natural appearance; in that case the heart has always been found filled with blood, and the arteries emptied.

Does this redness depend upon inflammatory action? Frank, Bertin and Kreysig, and Bouilland, have adopted this notion; but the colour is never attended by thickening of the membrane lining the heart and arteries, and its sudden, abrupt, and irregular termination, would seem to indicate that it was caused by the irregular flowing of a coloured liquid upon the surface, and which, by the smallness of its quantity, could not touch all its points. Finally, this state of the heart and vessels has not only not been found to correspond with any specific symptoms, but it occurs in diseases of a very opposite character.

The second species of redness, or that which has a brown or violet tint, is also found in the aorta, pulmonary artery, valves, auricles, and ventricles; and sometimes it appears in them all at the same time.

This colour is often of unequal intensity, but it is always particularly marked where the blood has been most in contact with the parts: it generally penetrates through the internal membranous lining of the heart and arteries, and more or less into the textures beneath it. This redness is commonly found in those who have died of typhoid fevers, of emphysema of the lungs, of diseases of the heart, or whenever the agonies of death have been of long continuance, and accompanied by sensations of suffocation; it has been found especially when the blood is very liquid, and when the putrefactive process has commenced: thus it is seen most in the summer time, and when the body has not been opened before twenty-four hours after death. The redness is frequently attended by a certain degree of softening of the tissue of the heart, and humidity of the parietes of the arteries. Does this colour depend upon inflammation? It appears not, but that it is caused by the blood tinting the parts with which it comes in contact. The redness may also be produced artificially in a day or two, by introducing this blood into a portion of an artery separated from the body.

Inflammation of the internal coats of an artery may be suspected, if, in addition to the red colouration, they are swelled, and their capillary vessels injected.

Pseudo-membranous exudation from the internal surface of the heart and arteries.—The formation of a false membrane may be considered as an incontestible proof of the pre-existence of inflammation of the lining membrane of the heart and arteries. Several instances of this plastic formation have been observed: Bayle had seen the tricuspid valves inflamed and covered by lymph; Dr. Farre saw the aorta lined by it; Burns, Bouillaud, Bertin, and Laennec, have described similar instances of this deposit adhering to the internal surfaces of the heart and arteries.

Ulceration of the membrane lining the heart and arteries.—The internal membrane of the heart and arteries is so thin, that it is difficult to conceive its ulceration without that also of the tissues beneath it; yet there are many evident proofs of it, as may be seen in the works of Hodgson and Kreysig. Small pustules are also occasionally found projecting into the cavity of the aorta. These are probably formed upon the surface of the fibrous coat of the artery, or in the fine cellular tissue uniting that coat with the internal membrane.

Osseous, calcareous, and cartilaginous incrustations of the aorta.—Osseous and cretaceous deposits are always placed, when present, between the internal and middle coats of an artery. These substances are usually irregularly flattened, and of unequal thickness. Their internal surface is

generally rough, and imbedded in the fibrous coat of the artery, upon which they not only leave their impression, but gradually destroy its texture, so that when these concretions are removed, the vessel is semi-transparent where they had been deposited. Their internal surface is usually smooth, and covered by the internal membrane of the artery; sometimes, however, they are rough, and destroy that membrane, so that the phosphatic matter is exposed to, and bathed by, the blood. These incrustations form at first in small points, which gradually increase and unite, until they have been seen so completely to surround the artery, as to form an osseous coat around it.

Cartilaginous deposits often precede, and may be considered as the rudiments of, the ossific formations. These cartilages are softer than their analogous tissues. The phosphatic matter is at first deposited in them in small points, which increase in number, unite, until the whole of the cartilage is converted into bony matter.

The phosphate of lime is sometimes secreted in a pulverulent form; it is then found between the internal and middle tunics of the artery, mixed with a certain quantity of fluid, so that it presents the appearance of mortar, or putty, of greater or less fineness. The phosphate is occasionally found beneath the cartilaginous deposit, of the same putty-like appearance.

These osseous incrustations often break through the internal membrane of the artery, and separate it to a certain extent at their edges, forming projections into the cavity of the vessel. The blood then insinuates itself behind these projections, which fluid being placed out of the direct current of the circulation, coagulates, and still further destroys the fibrous coat, so as to become the most common cause of false consecutive aneurism. The fibrine thus formed has been called atheromatous matter, and the parts from whence the osseous deposits have been separated, have been considered as ulcers, although they are really not so; it is true that the edges of the internal membrane which has been ruptured are seen red and swollen, but these are the effects of the separation, and not the causes.

It is still a contested point whether the deposits I have just described are the consequences of inflammation or not. My time does not permit me to enter into the various hypotheses of different authors upon this subject; but I believe they are no more the results of inflammation than the calcareous deposits in the lungs.

You thus, gentlemen, perceive that the redness of the internal coats of the arteries depends most commonly upon mechanical causes, and not upon inflammation; and that the latter cause can only be admitted when the colour assumes an arborescent form, combined with a certain degree of swelling of the membrane, or is followed by an exudation of plastic lymph, or by ulceration.

Have we any signs of this inflammation when it really exists? None that are certain; but the following have been mentioned:—Pulse hard, quick, and full; pain and heat in the course of the aorta. Frank and Pinel have supposed arteritis to be the organic cause of synocha, from whence the latter author has denominated that affection "fièvre angiolenique."

OBSERVATIONS ON THE PATHOLOGY OF NERVES.

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[Concluded from p. 803.]

Other modes of compression, as might well be expected, produce similar results *, and this in whatever part of its course from its origin to its distribution the nerve may happen to be subjected to pressure. The positive evidence upon this point is so abundant and conclusive, that I might almost content myself with referring to the familiar examples, to which I have already had occasion to advert, of pressure during sleep upon the sub-occipital branches of the upper cervical nerves, or upon the ulnar, the radial, or sciatic nerves, which invariably produces a diminution or negation of nervous influence, whatsoever may be the degree of compression from the chair or table.

Many other causes also within the body may compress a nerve in its

* Eadem fiunt si pro vinculo alia quæcunque causa nervum compresserit.—*Haller, Elem. Phys.* V. 4, p. 322.

Quidquid ergo vel nervi continuitatem solvit, vel comprimendo ejus cavum delet paralysin faciet illius musculi, cui talis nervus prospiciebat. —*Van Swieten, Comm.* V. 3, p. 358.

La propagation des impressions externes ou internes est interrompue quand la continuité ou les connexions viennent à cesser entre la partie centrale et les organes en général. De là la perte du sentiment, du mouvement, et de la faculté sécrétoire, aussitôt que le nerf d'un organe vient à être coupé ou comprimé, soit par une ligature, soit par une tumeur voisine, dans son trajet, à son origine ou à son entré dans l'organe.—*Meckel, Manuel,* V. 1, p. 263.

course, and by obstructing the communication of nervous influence, paralyse the parts upon which it is distributed, and if the nervous cord be minute and thready, a very slight degree of pressure may suffice. An instance of this occurred to me in a fatal case of crowing inspiration, in which an inflammatory effusion at the base of the brain, near the foramina leading from the cranium to the orbit, although it produced no sensible effect upon the optic nerves, or the common trunk of the motores oculorum, was yet sufficient to paralyse the separate filaments which supply the superior recti muscles of the eye. This effect of the thickening of surrounding parts from inflammatory deposits around a nerve, is amply illustrated in those cases of facial paralysis which are of frequent occurrence, and only of late years well understood. A very interesting example of this has been detailed by Dr. Percival, and is not of the less value that the facts were recorded before the ingenious researches of Sir Charles Bell upon the peculiar functions of the fifth pair, and the portio dura of the seventh, were generally known to the profession. It occurred in an unmarried female of seventeen, of fair complexion, of sensitive and irritable habit, but robust form, in consequence of exposing herself, whilst overheated and perspiring from exercise, to a current of cold air which passed from an open window chiefly over her head and neck. On the following day she experienced some uneasiness from stiffness of the muscles in the parts which had been exposed; pain and swelling gradually supervened, and were followed in the course of a week by torpor and paralysis of the entire left side of her face, scalp, fauces, and neck. At the end of another week Dr. Percival first saw her, when "he found her face considerably swelled, her head drawn to the right side, her articulation very imperfect, and her power of deglutition and swallowing so much impaired that she could suffer only small portions of liquid, and by great effort, to pass down her throat." The inflammation was in this case confined to the textures surrounding the nerve, without implicating the nerves themselves. Had it been otherwise, the inflammation would have manifested itself in the production of the symptoms of excitement, and as the nerves affected were motor nerves, convulsive movements would have occurred; as in a well marked case of inflammatory affection of the same nerves, which in the same volume of the Medico-Chirurgical Transactions immediately succeeds the communication of Dr. Percival. This patient, fifty years of age, was seized suddenly with an affection in which *she felt* something drawing her tongue and mouth to the left side; it took her speech away, and her face shook very much. She had afterwards, in the progress of her complaint, twitchings of the occipito-frontalis and orbicularis muscles, her tongue was drawn forcibly in a curved direction towards the left molares, the teeth were clenched, and the lower lip much distorted by a strong spasm in the left depressor anguli oris, and depressor labii inferioris; the eyes also became affected, as did also the muscles of that side of the neck, so as to draw the head "round to the left shoulder, occasioning an appearance as if the left ear and chin were about to recline on the point of it." It was suggested by Dr. Thomas, in consultation with Mr. Mitchell, who narrates the case, that some local irritation on the nerves of the mouth might produce the complaint. Upon examination it was found that all the teeth on the upper and left side of the mouth were in a decayed state, and highly sensible when touched with a probe, and the gums inflamed and irritable. The symptoms gradually ceased as these sources of irritation were removed, and eight days after the extraction of the last of seven teeth the gratifying report is first recorded, that "the patient has lost all spasmodic action."

These two cases, thus placed in juxtaposition and contrast, are so interesting in themselves that it is scarcely necessary to invite attention to them. The same set of muscles were implicated in both cases. In the first they were paralysed by being, to use an expression of Mr. Swan, "strangulated" in their course by the compression of surrounding inflammatory deposits; but this not until a week had elapsed from the period of exposure, when active inflammation had subsided, and when intumescence alone remained. As the swelling disappeared the nerves recovered their energy. In the latter case inflammation at the roots of numerous teeth upon the side affected, of the gums, and probably of the alveolar processes themselves, had extended to the contiguous nerves of the

fifth and seventh pairs. These were morbidly excited, and associated in their disordered function those muscles of the neck, the shoulders, the chest, and probably the diaphragm, which are largely supplied with energy from the respiratory system of nerves.

Such instances of paralysis of the muscles of one side of the face, from exposure to a current of cold air, are by no means uncommon. Three cases have been recorded in the fifth volume of the Medical Transactions, and Mr. Shaw, and subsequently Sir Charles Bell, have multiplied instances of the same kind; so that the point is at length proved, by an extent of cumulative evidence which is perfectly irresistible, that paralysis may be induced by the accumulation and confinement around nerves, so as to occasion pressure, of the products of inflammation. Nor does it appear less clear that if the inflammatory affection of surrounding textures extends to the same nerves, spasm may be expected; at least it occurred in the case related by Mr. Mitchell; in one referred to by his associate in the consultation; and a third mentioned by M. Descot, which was also cured by the extraction of a carious tooth. If any additional proof were required of both these propositions, it will be found in a case already briefly noticed, in which Sir Charles Bell draws the distinction between the effects of pressure upon one nerve, and of inflammation in another produced by the same malady. The patient suffered from an ulcer of the character of "noli me tangere" or "lupus," which extending into the orbit, completely displaced the eye. "The swelling of the parts within the orbit compressing the fifth nerve caused insensibility of the part of the face to which these branches were distributed, without affecting the motion. When the tension and swelling subsided there was returning sensibility; but more than this, the inflammation affecting the nerves in their passage through the orbit gave the sensation of excruciating pain perceived as if in the face. An inflammation of a nerve does not give perception of pain in the proper seat of the disease, but in the part to which the extremity of the nerve is distributed."

That tumors of various kinds pressing upon healthy nerves in their course, will produce paralysis in the parts which they supply, is so well known as scarcely to require proof, and an appeal, therefore, to a few of the numerous cases which are upon record will suffice to verify the assertion. Amongst those about which there can be the least dispute, as both the cause and effect are abundantly obvious to the senses, are the paralytic affection of the portio dura of the seventh pair. The first in the series of admirable pathological illustrations of the views of Sir Charles Bell, contained in the appendix to his work upon the Nervous System, is of this kind. The local palsy was produced by a gland situated between the angle of the jaw and the mastoid process, and enlarged from mercurial irritation within the mouth. In a second instance, communicated by Dr. Malden, in whom I recognize a cotemporary who has not disappointed the expectations formed of him when in Edinburgh, the paralysis of the face is said to have been "produced by a hard, fixed, and indolent tumor, lying between the ramus of the lower jaw and the mastoid process of the temporal bone." "In a fortnight the tumor disappeared, and with it gradually the paralysis of the face." In a third, transcribed from the Pathological and Practical Researches on the Diseases of the Brain and Spinal Marrow, by Dr. Abercrombie, it arose from a tumor under the ear, of the size of a small bean, very firm, and of an ash colour. It lay directly above the facial branch of the portio dura, and there was considerable appearance of inflammation in the cellular membrane surrounding the nerve; but "*without any deviation from the healthy structure in the nerve itself.*" In a fourth, an enlarged gland, tender on pressure, just between the mastoid process and the upper portion of the lower jaw, produced the same effect. In a fifth, the paralysis was the result of an enlargement with induration of the parotid gland. Upon other causes of pressure affecting these nerves it is unnecessary to enlarge; but amongst them may be mentioned mechanical injury and subsequent inflammation; abscess, especially if with a hardened base; tumor embedded in the substance of the parotid; and inflammatory thickening within the bony canal, through which the nerve has to pass before it escapes by the stylo-mastoid hole to be distributed upon the muscles of the face. The number and variety of causes which thus produce paralysis of the respiratory nerves of the face occasion this to be amongst the most frequent of local pal-

sics, and afford us ample opportunities of investigating its phenomena.

Illustrations of the same pathological principle—that simple compression upon a healthy nerve impairs or annihilates its function, according to the degree of pressure—may be derived from the numerous causes which are capable of producing amaurosis, amongst which are enumerated, by the highest authorities upon such subjects, turgescence of vessels, especially of those which constitute the circle of Willis; thickening of the membrane surrounding, or in contact with, the optic nerves; encysted or other tumors compressing the same nerves; caries of the os frontis trenching upon the optic foramina; deposits of serum or other fluids; induration, or other disease of the thalami; a gorged state of contiguous parts of the brain. In general these causes are slow in their operation, and the amaurosis proportionally gradual in its progress; but upon other occasions the cause of pressure is more speedy in its influence, when the effect is in proportion rapid, the loss of sight being even sometimes instantaneous, as I have known in more than one instance of puerperal convulsions, and even in that state of sanguineous congestion of the vessels of the head which sometimes occurs in advanced gestation, and a melancholy example of which I have recently had an opportunity of seeing in the family of a professional friend.

Many other causes of pressure might be enumerated and illustrated, but it is unnecessary to adduce them, as the principle is too well understood and universally conceded to require such additional confirmation. I shall conclude, therefore, this abstract of the pathology of nerves by inserting the masterly sketch of their morbid conditions by an eminent French pathologist, who says—"Nerves, as well as the parts whence they derive their origin, may be compressed, indurated, softened, enlarged, attacked with inflammation, suppuration, gangrene; they may be contused, wounded, compressed at their origin, together with the brain or spinal marrow, in their passage through the foramina of the cranium or of the vertebral canal, and along the rest of their course, whether in the cellular tissue or in the viscera, and in fact in every part of the body exposed to congestions and causes of compression." And again—"Nerves may be compressed by tumours in general; by distention of vessels; by the violent contraction or displacement of muscles; by dislocations, fractures, exostoses; by foreign bodies, shot, and balls; by pointed instruments; (?) by the wadding of fire arms; sometimes by the displacement of certain viscera; by the effect of violent contusions, by a fall, by a violent blow*." This account is evidently the result of minute observation and industrious research, is in the main accurate, and is given in reference to his great distinction of the diseases of nerves into those of "painful and convulsive stretchings of the medullary fibres, and into that kind of compression which renders the nerves insensible†."

In this sketch of the pathological history of nerves, the imperfections of which I am bound to acknowledge, it will be observed that I have not availed myself of the experiments of physiologists, repeated as they have been, from the time of Galen, *ad nauseam usque*, or the observations of pathologists upon the par vagum. I have sedulously avoided this, as I was solicitous, by examining minutely the facts connected with other nerves, to deduce such general principles as might be applicable to the injuries and morbid conditions of the eighth pair. Had it been consistent with my present object to enter upon that subject, I should have found abundant evidence of the truth of those general propositions which I have ventured to enunciate and endeavoured to illustrate. But this subdivision of the subject has relation to another inquiry which has much engaged my attention, and upon which it is my purpose to enter at another time and in another form‡.

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* Portal, Anat. Med. V. 4, p. 142.

† Whether the terms "tiraillemens douloureux, convulsifs," has been properly rendered in the text, may be questionable. French writers frequently employ these terms without intending to convey the notion that the fibres are actually put upon the stretch, and I believe the expression in this instance means merely the combination of pain and spasm, implying no more than what ancient writers meant to convey, when they used the terms "distensio," or "convulsio nervorum," the former being perhaps the more classical expression of the two.

‡ In an Essay on the "Crowing Inspiration of Infants," now preparing for the press.

POISONING WITH ARSENIC.

To the Editor of the Medical Gazette.

Sir,

If you think the following case of poisoning with arsenic worthy of insertion, it is quite at your service.

I am, sir,
Yours respectfully,
P. H. Holland, Surg.
Chorlton-upon-Medlock Dispensary.

Manchester, Feb. 20, 1835.

C. S——, a middle-sized woman, between 30 and 40 years of age, was taken ill at midnight on Tuesday the 17th inst. Mr. Partington, surgeon, was sent for; his assistant, who went, found her dead. It was impossible to obtain a satisfactory account of her previous indisposition, but it appeared in evidence, at the subsequent inquest, that she had been a servant with a surgeon in this neighbourhood, who had discharged her for misconduct. She had been observed, after receiving notice, to be very low-spirited, and unwilling to go, while he was determined that she should. On the evening of Tuesday, at half-past six or seven, she was slightly sick and faint, and declined going then. As it was quite necessary that she should go that night, her master procured a coach. She refused to answer any questions as to her illness; she continued faint and sick till midnight; refused to take the aromatic draught, or the brandy and water which her master had prepared for her, but requested cold water. Did not complain of any pain; did not appear seriously ill; got into the coach, and rode to her friends, about four miles off. The young man who went with her says that she made no complaints; did not appear to be in pain, only sulky, as he thought, but was sick. She did not speak, except to give directions as to where she wished to be taken. On arriving at the house, she was unable, but as was thought at the time unwilling, to walk unassisted. She sat down on a chair, and the people of the house thought she was intoxicated, and sick in consequence, but she did not vomit then: very shortly afterwards, however, she was seriously ill, became very faint, looked cold, and the skin became blue; her eyes fixed. She slipped off her chair, but did not fall to the floor. Mr. Partington was sent for; his assistant found her in a semi-reclined position, her head resting on the table, and quite dead. This was a little past one on Wednesday morning; between six and seven hours after the sickness was first observed.

A person dying so unaccountably, without apparent severe illness, called for judicial investigation. Mr. Partington was directed by the coroner to conduct the examination; which was made, in the presence of Mr. Hargreaves, surgeon, and myself, thirty-one hours after death.

The body remained very sensibly warm fifteen hours after death. The countenance was placid, but sunken, and very slightly contracted. The abdomen was sunken; no tympanitis or material discolouration of the integuments; there was slight lividity where the dress had pressed, and decided blueness of the fingers and nails. The intestines externally, and peritoneum, were more vascular than usual; no effusion, no opacity, no mark of inflammation. The colon was contracted to the size of the finger through its whole length, except near the cæcum.

Stomach. — Vessels injected externally. Mucous surface of the pyloric half intense purple-red, darker than raw meat, and softened. The stomach contained about two or three ounces of bloody mucus, with numerous grey, yellowish, gritty particles. The cardiac extremity and œsophagus were comparatively free from injury. Could not find any particles imbedded in the mucous membrane. The whole surface near the pylorus seemed equally acted upon.

In the duodenum, the mucous surface was softened, mottled, and corrugated. Throughout the first third of the small intestines there were patches of inflammation of about an inch in diameter, but in only some few instances did we find any of the grey particles actually *on* the spot, though in all some were found close by. The ileum was free from these patches, except about three feet from the cæcum, where the whole mucous surface, for some inches, was congested, softened, and nearly destroyed. Colon contained no fæculent matter (she had been purged while in the coach). There was no fæculent smell. The

bladder was quite empty. The uterus had the appearance of menstruation.

There was no effusion in the chest. Lungs were gorged with purple blood; most so behind. No disease of lungs, heart, or pericardium. Veins and sinuses of dura mater distended with blood; arachnoidal vessels injected; no opacity, no effusion whatever. On cutting through the medullary substance, spots of blood appeared. Substance of the brain neither hardened nor softened.

It was now evident that the deceased had been destroyed by some irritant poison; it only remained for the medical examiners to ascertain what that poison was. The slow appearance of the symptoms, and the morbid appearances being principally seen towards the pyloric extremity, shewed it to be some slowly soluble substance; the appearance of the powder led us to suspect arsenic.

I took $\frac{1}{4}$ or $\frac{1}{2}$ a grain of the suspected substance, mixed it with charcoal, put it at the bottom of a small tube, which I heated cautiously by a small spirit flame. We presently perceived the arsenical odour, while a ring of iron-grey formed half an inch from the bottom of the tube; above that, some white sublimate. On cutting the tube, the grey crust appeared decidedly a metallic surface, of octahedral crystals; the triangular facets, set at right angles to each other, were easily seen with a lens. I placed the broken tube in a test tube, and heated it, when a dense white cloud formed, and settled on the side. I dissolved this white substance in solution of potass, mixed two drops of the solution with four of ammoniaco-sulphate of copper, in a watch-glass: bright green arsenite of copper was immediately formed. I then mixed two drops of the solution with one of liquor ammoniæ, touched this with a stick of lunar caustic, which was directly coated with a yellow crust of arsenite of silver. A portion of the grey-white powder was subjected to the two liquid tests, shewing decidedly that it was arsenic, though less satisfactorily than by the reduction of the metal, which admits of no possibility of error.

Note.—The quantity of arsenic taken in this case must have been very considerable: there could not have been less than ten or twelve grains found in the stomach, besides what had been rejected by vomiting and what passed to the intestines. This, together with the large extent of surface acted upon, may account for the symptoms being those rather of stupor than of intense irritation.

TREATMENT OF FRACTURES OF THE HUMERUS.

To the Editor of the Medical Gazette.

Sir,

The treatment of fractures of the humerus is often very troublesome, from the extreme retraction of the one portion of bone upon the other, particularly where the fracture is oblique, and situated below the insertion of the deltoid muscle; for then the upper portion of bone is drawn outwards and forwards by its action, while the lower is drawn upwards by the muscles that pass from the scapula down to the elbow. This retraction is often produced by the obliquity of the fracture alone, the deltoid remaining relaxed and inactive.

The common mode of treating this kind of fracture, and by which the retraction is prevented, is without making any extension on the muscles, but merely applying pressure by means of a bandage carried circularly round the arm, and four lath splints to prevent displacement of the ends of the bone. This in almost every case is found to be the simplest and best treatment that can be adopted, being sufficient to obviate the retraction, and to keep the fractured portions of bone in proper apposition.

There are, however, some cases where the obliquity of the fracture is so great, or the action of the muscles so strong, that this treatment by lateral pressure only succeeds with difficulty in preventing displacement of the bone, rendering a repeated application of the splints necessary, as the slightest loosening of the bandages relieves the pressure upon the muscles, and allows them to act, and draw the portions of bone from their line of apposition. These cases, if not difficult to treat, are often very troublesome, and require great care to prevent deformity in the limb.

A case of this kind occurred lately at

the Middlesex Hospital, in which retraction existed to a great extent, the bone being fractured below the insertion of the deltoid, and in a very oblique direction, there being no apposition of the ends of the bone. The ordinary treatment was tried; but so great was the tendency to displacement, and the difficulty of preventing it so great, that it was found necessary to re-apply the splints every day; the ends of the bone forming an angle with one another, however tightly the limb was bandaged.

Having seen this case, it appeared to me that this great retraction and displacement of the ends of the bone might be more easily prevented, and the treatment facilitated, if counter-extension could be employed in this, as in some other kinds of fracture. With this view I had the following kind of splint made, and with the permission of Mr. De Morgan, the house-surgeon, I had an opportunity of employing it in the above case.

The annexed drawing represents the splint.

Fig 1.

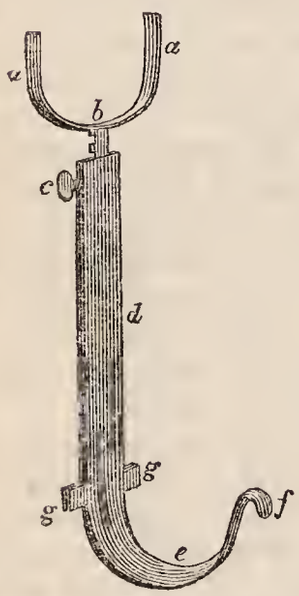
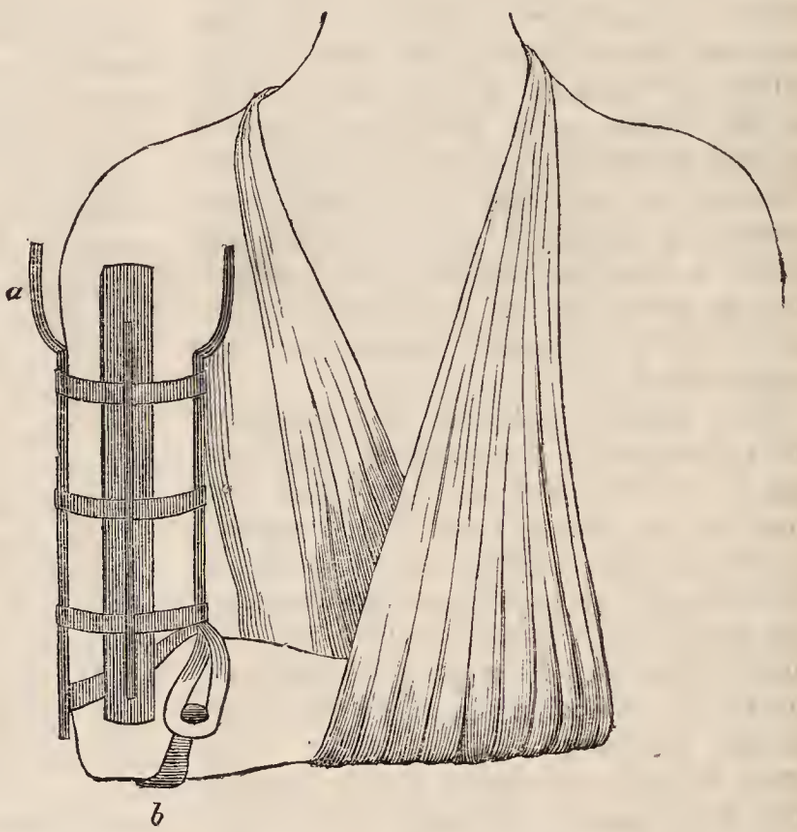


Fig. 1.

a a, The crutch.
b, The slide, to elongate or shorten the splint.
c, The screw, to fix the slide.
d, The splint.
e, The curve for the elbow.

Fig. 2.



f, Hook for the bandage, which with *g g*, fix the elbow.

Fig. 2

Represents the apparatus when applied.
a, The crutch. *b*, The curve under the elbow.

The instrument consists of a thin bar of iron, extending from the axilla down to the elbow, curved at its inferior extremity, that it may pass under the elbow, and turn up as high as the outer condyle. The upper end is perforated with a vertical groove, to admit a sliding bar, to which is attached a kind of crutch, formed by a narrow bar of iron, curved to press upwards in the axilla. This crutch allows of being raised or depressed, by means of a small screw which fits into teeth in the sliding bar, so that it can be elongated or shortened at pleasure. It is applied as follows:—

The splint is to be made of the proper length by means of the sliding bar, measuring it with the opposite limb, and making it rather longer, to allow of the thickness of the pad upon which the elbow has to rest. The limb is then to be extended to the utmost, by drawing down the lower portion of bone, and keeping the arm as near to the side as possible. The splint is to be placed upon the inside, fitting the elbow into

the curve, and pushing the crutched extremity under the axilla as high as it will go. The elbow is then fixed by a few turns of bandage carried across it, and fastened round two small lateral pegs on the inner side of the splint, and round the curved end upon the outer side. Counter-extension is now produced; for the elbow is fixed to the inferior extremity of the splint, and retraction upwards prevented by means of the crutched extremity that presses in the axilla. The limb is then confined by three splints, placed on the outer, fore, and back part of the arm, with three straps, which can be moved to make pressure on one part more than another, as may be required. The fore-arm and hand should be evenly rolled before applying the splint, and the bend of the elbow well padded, to guard against unequal pressure of the bandage. Pressure on the superficial veins is prevented by putting the fore-arm into extreme pronation, causing the bandage then to press on the outer rather than fore part of the joint, where the veins are situated.

It is not my intention to recommend the treatment of fractures of the humerus by counter-extension as a general practice, it being much more complicated than the ordinary method, and in the majority of cases quite unnecessary, the simple lath splints and lateral pressure answering every purpose required; but in the above case in which I tried it, the treatment was certainly facilitated, by preventing the extreme retraction that existed. I have since tried it in another case, and with the same result; from which I am inclined to think, that where the fracture is very oblique, and the apposition of the ends of the bone difficult to preserve, counter-extension may be employed in this, as in other kinds of fracture, with advantage, and the treatment thereby be facilitated.

If you can insert the above in your valuable journal, I shall feel obliged.

I remain, sir,
Your obedient servant,
EDWARD LONSDALE.

8, Berners-Street, March 2, 1835.

ACTION OF IODINE UPON GUAIACUM.

To the Editor of the Medical Gazette.

SIR,

I BEG to offer to your consideration the following remarks, which, if deemed worthy of insertion, it would oblige

Your obedient servant,
J. BRETT.

General Dispensary,
March 6, 1835.

In trying the effects of various reagents on guaiacum resin, I noticed the following curious fact. On the addition of a very minute portion of free iodine to a small quantity of an alcoholic solution of the powder of guaiacum, I obtained a very fine blue colour, varying in its different shades, according to the quantities used. The decomposition of iodine which here takes place, bears so close an analogy to that effect which is produced by starch, that all I feel surprised at is that it has not been mentioned before. The circumstances that are necessary for the success of the one experiment hold good in the other; and the modifications also are in a great measure alike. I am induced to advance these brief remarks merely by the consciousness that this circumstance is of a curious and interesting nature; indeed the action of several reagents towards guaiacum is of so particular a kind, as to merit a much closer attention than has, perhaps, been as yet paid to it.

INJUSTICE OF THE GRATUITOUS PROFESSIONAL ATTENDANCE OF MEDICAL MEN.

To the Editor of the Medical Gazette.

SIR,

I HAVE often been tempted to address you, and through you the profession in general, on the subject of the minor medical charities of this great metropolis; but have hitherto deferred it, with a hope that the subject might have been taken up by some one who could do it more justice. In this I regret the torpor of the profession has disappointed me. A circumstance has lately occurred at one of those institutions, which induces me to trouble you with the follow-

ing observations. Should they merit a place in your journal, they may not be without their effect.

At the Welbeck-street Dispensary, the office of physician became vacant. Five candidates commenced a warm canvass. Upon the day of nomination, a motion was made, that in future no physician should receive any salary, the senior physician and surgeon having always received 60*l.* a-year. The motion was made by a solicitor, and carried *nem. con.* The number of candidates in this instance, with the example of professional meanness exhibited some time back at the Marylebone Infirmary, doubtless suggested this *saving* clause. In every other profession, the labourer is worthy of his hire; but with us the case is different. Yet, if Adam Smith's doctrine be true, "that the wealth of a nation consists in her population," the science of medicine, which is so essential to its well-being, is not unworthy of general support.

It would be a waste of time to analyse the motives which prompt three-fourths of the subscribers of those charities in giving an annual guinea. Many of those who profess the widest philanthropy, very prudently commence operations at home, by quartering their domestics, in all states of illness, upon those institutions, thereby receiving ten times the amount of their subscription, by the attendance of a physician and medicines from the charity. It is not an uncommon thing for the subscribers themselves to be attended in this way; I have attended them repeatedly. These are the men who refuse the smallest remuneration for the public services of medical men. If we find a merchant lavish of his stock in trade, do we not not consider him a foolish, imprudent man? If we see a barrister who takes briefs without a fee, do we not see him immediately sent to Coventry? Yet physicians, whose stock in trade consists of time and a modicum of brains, are expected to be lavish of their capital, and at the same time to be sensible and well-meaning men. How charitable!

It is a curious question, and one not unworthy the attention of the philosopher, why, of the three learned professions, medicine is the only one in which there is no common tie. This is the more surprising when I consider the wide field of medical erudition. The philosophers of old tell us, that "didicisse fideliter artes" humanizes even savage nature; but the medico-philosophers of the present day give us another reading of this maxim. We profess ourselves—nay, call ourselves—members of a liberal profession, and belie ourselves in the very first act of our calling. For a notable instance of this, we need not travel far from the sound of Bow bell, where talent, reputation, and integrity, were superseded by the servile tools of a trading sect. Can we wonder, then, that we have sunk in public respectability—that our services are unrequited—when we ourselves, by a gratuitous offer of them, have stamped them as valueless?

It is still, however, in our power to make ourselves not only respected, but remunerated. Let the medical officers of all charities unite, and demand a remuneration for their services. The principle of self-preservation, so powerful throughout nature, would be seen to manifest itself here; and the dread of having our streets the haunts of disease, would bring back the public to a sense of justice.

In proposing such a measure as this, I am sure I am consulting the interests of the unhappy beings who are objects of those charities, more than the miserable traffickers of guinea subscriptions, whose affected charity is a libel on humanity.—I am, sir,

Your obedient servant,

MEDICUS.

Feb. 26, 1835.

WEIGHTS AND MEASURES FOR THE NEW PHARMACOPŒIA.

To the Editor of the Medical Gazette.

SIR,

ALLOW me, very briefly, to recal the attention of your readers to the subject of an alteration in the weights and measures employed in pharmacy, to which your correspondent, Dr. Barham, has referred in a recent number of your valuable publication.

As it is intended to bring the "Weights and Measures Act" of last session before parliament, very shortly, for revision, and as a committee of the College of Physicians is now engaged in revising the Pharmacopœia, it ap-

pears extremely desirable that the present opportunity of introducing the necessary alterations should not be lost. Every day's experience proves that a change of some kind is required. The confusion necessarily arising from the application of the same denomination to weights of different value, particularly in establishments where both troy and avoirdupois weights are employed, is too obvious to need illustration. The same confusion exists with respect to measures, with this additional anomaly, that the Pharmacopœia still prescribes the old wine gallon and its divisions, the employment of which is illegal, and subject to severe penalties.

The adoption of the imperial pound as the standard both of weights and fluid measures, as proposed by your correspondent, would obviate many inconveniences; and his suggestions as to minims and grains appear to me to deserve consideration. I would further suggest the introduction of the *fluid pound* as a substitute for the present pint and gallon.

If the old gallon be still employed, a clause should be introduced into the new act to legalize it; but the introduction of either the old or imperial gallon into the new Pharmacopœia appears to be unnecessary.

If the above proposition respecting fluid measures should be found objectionable, the cubic foot (equivalent to 1000 imperial ounces of distilled water) might be adopted.

I merely throw out these hints to draw the attention of your readers to the subject, and hope it will be taken up by some person more qualified to do it justice than, sir,

Your obedient servant,

B. Y.

March 6, 1835.

OBSERVATIONS

ON THE

CURATIVE PROPERTIES OF HYDRIODATE OF POTASS

IN PERIOSTITIS AND CHRONIC ARTICULAR RHEUMATISM.

By John Clendinning, M.D.

Physician to the St. Marylebone Infirmary, and to the Western Dispensary, Westminster, &c.

Whatever may be the disadvantages of our great establishments for the relief of diseased poverty in a moral or political point of view, they certainly and greatly benefit the public in the otherwise unattainable facilities they afford for the advancement of the science and art of physic. In the absence of such laboratories for the analysis of the signs and causes of health and disease, it were difficult to conjecture how much more slowly we should have advanced in the prevention and cure of physical suffering. Our great hospitals have two principal advantages over private practice, as sources of professional improvement. Not to dwell on minor but very important points (1, such as compulsory attention to rules as to drugs, diet, and regimen—2, accurate registration of symptoms, &c. without distraction to the physician—3, greater facilities of post-mortem investigation, &c. &c.), I would say that the hospital physician occupies a position more advantageous than the private practitioner, in that—1, with a full supply of all useful agencies, medicinal, dietetic, &c., he has at the same time a control, as complete as may be, over the use of those agencies—every person and object about the sick being under his authority; 2, that he is as nearly as possible unfettered by any considerations of selfish interest, and is at liberty to employ the most gigantic remedies that the cases of his patients may seem to him to require or admit of, without any other restrictions than such as are imposed on him by his own sense of right, and his obligations to the often acute and inquisitive youth that attend his practice. It is, therefore, to the physicians of our medical charities principally, if not exclusively, that British medicine must look for improvements in Semeiology and Pathology; while, with regard to the Materia Medica and Therapeutics, the claims of the art on the official practitioner are peculiarly strong, on account of his almost exclusive privilege of exemption from the inconveniences arising from private fastidiousness, timidity, or caprice, and from the dangers of professional envy or malice. For my part, I have in private practice but rarely, and if at all, timorously ventured on the exhibition of any remedy not already current with the stamp of authority; and I have no reason to believe that I am by any means singular in that respect. As an official physician, however, I have not been insensible to the superiority of

my position; and, when opportunity offered, have endeavoured at least to turn it to useful purposes. To state the results of experiments lately made in an official capacity principally, on the powers of iodine in diseases as a remedy for which it is as yet little known, is my present object.

In the course of last summer, a very interesting paper was read before the College of Physicians, from the pen of my friend Dr. Williams, of St. Thomas's Hospital, in which Dr. W. stated that he had found the hydriodate of potass a very certain and speedy remedy for periostitis. On the occasion on which that important paper was read before the College, I had not the good fortune to be present; so that previously to its publication in the Medical Gazette, I knew nothing of the virtues of iodine as a remedy for periostitis and other chronic inflammatory affections of the hard membranous tissues. My first practical acquaintance with the subject I owe to the late distinguished president of the Royal Medical and Chirurgical Society.

Case I.—Not many weeks after the publication of Dr. Williams's paper, a case occurred in my practice at the Western Dispensary, which, after foiling every remedy I could think of, and exhausting, as I supposed, the resources that a dispensary can command, I succeeded in having transferred to the abler hands of Dr. Elliotson, in St. Thomas's Hospital. It was a case of a young woman, of about 21, enjoying apparently excellent general health; her uterine, intestinal, and pectoral functions were in perfect order, but she constantly complained of dull pain usually either in the back or front of the head: it was of some years standing, and sometimes alternated for a time with a pain in the left hypochondrium, with which it also sometimes coincided. This pain I treated at different times by cupping, blistering, setons, purgatives, &c., and by steel, bitters, aromatics, ammonia, and other stimulants, and by anodynes and narcotics of various kinds, also by mercury to ptyalism; but none of these means proved *remedies*, and some did less good than mischief. After several months of fruitless endeavour, I had her placed under the care of Dr. Elliotson, with a view to procure for her the benefit of the superior resources of a great medical establishment, and lost sight of her for two or three months.

Case II.—In the meantime another young woman, who proved afterwards to be a sister of the former, applied to me. She complained of a pain similar to her sister's in character and duration, and in like manner enjoyed apparently good general health; the headache, however, was, like her sister's, sufficiently constant and distressing to prevent her doing any thing to earn her bread. At first I tried the depletive plan, and afterwards other remedies, but without deriving any important result from any thing but from venesection; after which she always enjoyed days or even weeks of ease. Venesection, however, is not a remedy for frequent repetition, where there is no urgent danger and no plethora; and after having pushed it as far as her constitution would suffer it, I was forced to cast about for other means.

About this time I learned that her sister had returned home from St. Thomas's quite well; and, on inquiry, ascertained that, after having failed with many other remedies, Dr. Elliotson had succeeded in relieving her by large doses of the hydriodate of potass. I then commenced the use of that salt with the sister under my own charge, and soon found it produce excellent effects; the pain yielded, and the patient at length returned thanks. Before finally losing sight of these two patients, I had an opportunity of ascertaining that the first-mentioned had had an apparently periostitic affection of the temporal bone, above and behind the left ear (I think, for my notes have been mislaid), which, if it existed during my treatment of the case, was certainly not complained of, so as to draw my attention to it; and when I examined it, the node was easily detected, and rather tender on pressure.

I learned also that Dr. Elliotson had attributed her headache to the node, and her relief to the remedial power of iodine in periostitis. I then strictly examined her sister's head, but failed in eliciting any thing from personal inspection, or minute inquiry, to warrant the inference that she had ever laboured under periostitis in any part of the skull. Both these young women were afterwards obliged occasionally to use the hydriodate, but continued, when I last

heard of them, to enjoy greater ease than they had experienced from any former remedy.

Case III.—In the course of last summer, a seafaring man, of about 25, was admitted at the Western Dispensary, having, along with other traces of venereal taint, nodes on his shins disabling him from labour. His constitution was good, and vital and natural functions undisturbed. In this case I employed the hydriodate, in doses of five grains, four times a day, in compound decoction of sarsaparilla; and in the course of ten days or a fortnight the swellings had disappeared, and he was soon after discharged convalescent.

Case IV.—About the same time with the last patient a woman was admitted at the Western Dispensary, who had long suffered from a venereal taint contracted from a profligate husband, which had attacked the interior of the nose, and, in addition to other symptoms, had produced tenderness of the scalp, dependent on a palpable periostitis of the frontal bone. This woman was altogether long under treatment, but got quickly rid of her periostitis and tender scalp, and headache produced by it, after the commencement of a course of hydriodate of potass in compound decoction of sarsaparilla.

Case V.—In July last a gentleman between 30 and 40 years of age was suddenly attacked with headache, vertigo, double vision, flashes of light, and other signs of cerebral disturbance. He had also, for the first week or ten days thereafter, rather singular illusions of vision; not only were objects changed variously in shape, size—viz. halved, doubled, &c., but he had also a succession of spectra, visible nearly equally distinctly in light and darkness; sometimes whole figures, sometimes single limbs, generally men and women, whether in whole or part; sometimes brute creatures; occasionally clouds or other vapour-like appearances. The spectra, when most constant, appeared and disappeared alternately at very short intervals, and seemed called into existence by the stimulus of the arterial blood, being often, if not invariably, synchronous with the pulse, and disappearing with the subsiding and swelling of the blood-vessels. This combination of symptoms was combated by leeching, purging, low diet, rest in bed, &c. These symptoms were in some respects new to the patient; but there was good reason to attribute them to sympathetic cerebral irritation, arising from periostitis of long standing on the vertex and right side, in front of the ear, causing tenderness of the scalp over the whole of the right half, or rather more, of the head.

He had for years past been subject to periostitis of various bones, viz. the sternum, clavicle, acromion, and cranium—sometimes in one part, and sometimes another, and all consequences of an inveterate rheumatism of the scalp and neck, which originated from a practice of wrapping wet cloths round the head during the night, as a remedy for troublesome headaches, attributable to defect of exercise and excess of study. The antiphlogistic means above mentioned as first employed, produced little effect. On former occasions, leeches, and other means of like tendency, had always given relief; but from frequent use their power appears to have been abridged; they had ceased to be any thing more than palliatives. Additional advice was wished for, and Dr. Elliotson's aid requested.

Under that gentleman's direction the hydriodate of potass was exhibited in small doses, to be cautiously augmented. The dose was rapidly raised until it reached ten, fifteen, twenty, and at one time for a few days thirty, grains of the salt thrice a day. After about a fortnight's use of the remedy he was free from headache, visual defects, and every other important inconvenience, except the weakness produced by the antiphlogistic measures employed before the attendance of Dr. Elliotson.

The use of the remedy was persevered in for some weeks, and at length suspended, owing to the unpleasant cardialgia, flatulence, &c. produced by such large doses; but he had still occasional slight and transitory tenderness of the scalp, sternum, &c.; he had frequently momentary cold tricklings about the forehead, cheek, &c. with sense of fulness in the head, giddiness, &c. The crackling sound, also, noticed by Dr. Johnson, in a recent number of the Medico-Chirurgical Journal, as attending the contraction of

muscles affected with chronic rheumatism, was more than usually distinct at the insertion of the cervical muscles into the occiput, and was heard even by the patient himself.

In October, consequently, he was again suddenly attacked with symptoms, such as those just described, and for which Dr. Elliotson had ordered iodine. This attack also was combated by the hydriodate, and in due time completely subdued; and from that time to the present he has had slight returns, but no attack of periostitis, or its effects, and is now in better health than for years past.

Case VI.—In the interval between the first and second attacks of the patient last noticed, a gentleman was brought to me for advice, by my friend Mr. Kelly, of Pinner. He was between 40 and 50, of originally sound constitution, and had suffered for years from rheumatism in one form or other. For a considerable time before I saw him, the complaint had advanced to the periostitic stage. He complained principally of nocturnal pains of the long bones, or œsteocopi, which required large doses of opium for their alleviation. He had latterly as much as two or three grains of morphia at a dose, without other effect than relief from pain. On one of the tibiæ there was a hard swelling, visible at a considerable distance, extremely tender, extending longitudinally over the greater part of the anterior surface of the tibiæ, and obviously a periostitis or node of the hard kind. From the history of the case, I have no doubt it was of purely rheumatic origin. All the usual remedies had been tried without permanent advantage. On detecting the node, I at once thought of the hydriodate of potass, and accordingly prescribed it, in doses of three grains, thrice a day. The dose was increased gradually, and the result was very satisfactory. After a few days he abandoned the opium altogether, and in less than a month Mr. Kelly called to inform me that he was quite well. This patient never, if I rightly recollect, took so much as is recommended in Dr. Williams's paper.

Mr. Kelly has informed me, that in two or three other cases of periostitis, in which he has since used the hydriodate, he has had the same success as in Mr. M.'s case.

Case VII.—Nearly six months since, a lady, resident in Lincoln's-Inn-Fields, requested me to see one of her servants, who was disabled from doing her work by pains in the head, neck, and back. On examination, she was found to be possessed of an originally sound constitution, but to have suffered for some time from rheumatic pains, extending from the occiput to the loins and sacrum through the whole length of the longissimus dorsi, and other elongated muscles that fill up the grooves between the spines of the vertebræ and shafts of the ribs. There was likewise extreme tenderness of the occiput, owing obviously to periostitis, and some pain also at the lower end of the muscles just referred to, owing apparently to a rheumatic inflammation of the fascia. The exercise of the muscles that support the head, and of the ligamentum nuchæ, as in stooping, sneezing, coughing, was distressing; and she had difficulty of lying on her back in bed, from tenderness over the occipital bone. She had likewise a complaint of the uterus, owing to hard labours, of which further notice is unnecessary. This woman I put under the influence of iodine, in the same manner as Mr. M., and with the same result. In about a fortnight, her tenderness of scalp and pain on stooping were gone, and she soon abandoned the use of the remedy.

Case VIII.—In the course of the last autumn, a young gentleman consulted me respecting circumscribed and tender swellings on his head, at the highest part of the frontal bone; and arising, there was reason to believe, from sexual indulgences. He had had his head shaved, and worn a scalp, for the use of blisters with less inconvenience, and had used sarsaparilla and other means, but without permanent advantage. This was obviously a mild case of the class so successfully combated, at St. Thomas's, by Dr. Williams, with the hydriodate of potass, and I at once recommended that medicine. In a few days the swellings were sensibly less, and in ten or twelve days there was no longer any need of remedies.

Perhaps the cases already mentioned will suffice at present on the subject of periostitis—that is, the disease respecting which the efficacy of Dr. Williams's (I believe I may say) discovery is best

made out. I could, however, easily swell the number from my own resources, without borrowing at all from my friends. Since my appointment to the great parochial hospital of Marylebone, more particularly, I have had greatly increased means of observing the operation of the hydriodate, and have from that source collected the particulars of three or four other very satisfactory examples of the utility of iodine in the form of disease in question.

A second class of cases, in which Dr. Williams does not appear to have employed the hydriodate, and in which I, led by analogies that I need not point out, have very lately been induced to try it, and with very satisfactory results, —viz. chronic articular rheumatism—I shall now proceed to notice and to exemplify.

[To be concluded in our next.]

DEATH BY HANGING,

Unattended with any of the usual characteristic Lesions *.

By M. Albin Gras.

What is remarkable in the present case is the absence of every sign by which it might be determined (had the body been found under suspicious circumstances), that death had been produced by suspension. There was the mark of the cord, indeed, round the neck, but nothing to shew that the body had not been suspended *after* death.

Josephine, aged 27, was admitted into the Salpetrière on the 21st December, 1834. In the course of a few days she attempted to strangle herself with a handkerchief; then with her stocking. A strait-waistcoat was put upon her; but this was subsequently removed on her giving a promise not to do herself mischief. On the 3d of January she was questioned as to her history, when she gave an extraordinary, but rather incoherent, account of herself. She did not know whether any of her family had ever laboured under mental derangement, and she had never had any malady to signify, except, perhaps, some *nervous attacks*, or *vapours*. At the age of 14 she left home, and went to service; and since then, as she described it with deep repentance and remorse, she had lived a very disorderly life. After many changes and chances she formed a connexion with a man who quitted her when she proved with child. Her grief caused her to miscarry. This was in January, 1834; after which she came to Paris, and lived with her sister till the month of September. She then became *femme de chambre* in the family of the Marquis de R——. It was after her arrival in Paris, she said, that she began to *look inward* upon herself, and applied to a confessor, who frightened her extremely by telling her that she was lost. Her melancholy was aggravated from that moment, and she was the victim of religious terrors. She did not, however, neglect her service, nor give any dissatisfaction to the family she lived with; but beyond the door she could not go, though aware that it was her duty sometimes, and though she wished it. Soon after it became necessary to send her to the Salpetrière.

At her admission, she was observed to be of a moderately full habit of body, dark complexion, and of a bilious temperament. The expression of her countenance was that of melancholy. She spoke little, and when she did it was only to say how very wretched she was; that she did not know what would become of her soul; that she deserved to be starved. When visited afterwards, she requested to be put to death: she said she should never get well; but she complained of no bodily ailment, except some slight pain at the pit of the stomach. The only medical treatment she received was some slight purgatives: twice, indeed, she got croton oil. She also had some baths; but she ate little, and only when pressed to take food. Three days before her death, she seemed on the whole better. But on the 20th, she asked me, at the visit, if I thought she should live; and that evening she several times struck her head against the wall. On the 22d she arose at four in the morning, went down to a cellar where there were several cords, which she had, no doubt, secreted there some days before, and hung herself from one of the rails of the staircase. She was not cut down till an hour and a half af-

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* From the *Annales d'Hygiène*, No. xxv.

terwards, when all efforts to restore her to life proved vain.

Upon examining the body, at eight o'clock A.M., there was no distortion about any part of it; the features and lips were pale; the mouth and eyes partially open. At ten, although the mean temperature of the weather was at the freezing point, there was still a slight moisture on the surface. At four in the afternoon, the elbow and knee-joint were still flexible, but the jaws were firmly closed.

The autopsy took place thirty hours after death. At this time there was cadaveric stiffness; the skin generally was pale, but there was no tumefaction any where observable. The tongue lay within the alveolar processes, and there was no froth in the fauces. On opening the head, much blood was found on the exterior of the dura mater; but this effusion was partly, if not entirely, owing to the blows of the hammer used in breaking open the cranium. The substance of the cerebrum was injected; the optic thalami, the corpora striata, the cerebellum, the protuberance, and the cortical substance, less so. No adhesion of the meninges. The whole brain firm, and the cranium tolerably thick.

The skin of the neck presented a furrow, which ran in an oblique direction from left to right, and from below upwards; the most elevated part of it corresponding to the angle of the jaw on the right side. At this part there was a depression, caused by the knot of the cord. The furrow passed in front of the os hyoides; so that only the vessels of the left side of the neck were compressed. *Beneath* the furrow on the left side, the external jugular vein was distended with air. Along the track of the depression the skin was yellowish, like parchment; it adhered strongly to the subcutaneous tissue, but there was no ecchymosis, no fracture or injury of the os hyoides, nor of the cartilages. There was no trace of the furrow on the subjacent muscles; no rupture of the coats of the vessels, either of the jugulars or the carotids; nor was there any luxation of the vertebral column.

In the lungs there was very little blood; their colour was pinkish, and in their upper portion some tubercles were observed. The parietes of the heart were thick; they contained but little blood; and what was remarkable, the left cavities more of that little than the right. A very small quantity of blood in the inferior cava.

The stomach appeared shrivelled; slightly red in some places. Of the small intestine, the colour was an uniform light rose-pink. The liver seemed to be of a somewhat deeper red colour than ordinary. Spleen and kidneys normal. The uterus and vagina presented no unusual appearance; but the ovaries were very large, and had on their surface four or five little serous cysts, each about the size of a vetch. One of them, smaller than the rest, was embedded in a little clot of blood, with a yellowish tinge.

Above the left knee there was some slight excoriation. The fingers of both hands were gently flexed; the thumbs not so.

It will be perceived that there is a strong analogy between this case and some of those which were published in the *Archives Générales*, in the year 1823, by M. Esquirol: but, at all events, it proves that suspension *may* take place during life, and leave on the dead body no sign of mortal lesion,—no bloated face, no protruded or swollen tongue, no ecchymoses on the neck, no rupture of vessels or their coats, no luxation; no more than a simple furrow, where the skin is yellowish and crisp, and the subjacent tissue somewhat condensed; nothing, in fact, to enable us to say whether suspension has been effected on the living body or on the dead.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

A Practical Compendium of Diseases of the Skin; with Cases, &c. &c. By JONATHAN GREEN, M.D.

THE work before us is a condensation, judiciously made, of the present state of knowledge of cutaneous diseases in our own country, and in France.

We do not intend to enter into the consideration of certain unimportant changes which have been made in the mode of arranging these diseases, because it is upon other grounds that the

value of the book rests; it is upon the application of certain energetic therapeutical agents—baths of various kinds.

The importance of medicated baths as remedial agents in the treatment of cutaneous diseases, has long been established. In their employment, however, no system has been adopted; they have been indiscriminately used in all forms and in all stages of these affections, whilst they were, perhaps, only applicable to particular diseases, and only to certain stages even of these diseases. We hail, therefore, with great satisfaction the work before us, embodying as it does the extensive experience of the author in the application of every variety of these agents, to almost every variety and stage of skin diseases.

The doubt we entertain is not as to their general value, but whether the author is not rather too confidently impressed with their universal applicability. This circumstance, however, cannot be made a ground for reproach; there are few men, either medical or other, who are not influenced to a greater extent than they would like to confess, by some favourite idea.

The author has done his part; the public will decide whether they can go with him to the full extent of his commendation of these agents. We are of opinion, that in spite of the alleged infallibity of the remedy, we shall still have to endure the reproach which will attach to our inability to suggest a remedy for many cases of diseases of the skin. Whether subsequent experience shall reject or confirm some of the author's data regarding them, this much is certain—that the profession must be largely indebted to him for communicating the results which he has obtained from an extensive administration of the remedy during a period of "fourteen years."

We earnestly recommend those who are interested in the subject, not only to read this book, but to put the efficacy of the agent to the test.

Sketch of the History of Medicine, from its Origin to the Commencement of the Nineteenth Century. By J. Bostock, M.D. F.R.S. &c. 8vo. pp. 240.

We have here, probably, as good a sketch of the history of medicine as the space allotted to it could allow. Dr. Bostock has arranged his materials, and drawn on the ample stores which were open to him, with ability and success. He has produced a very superficial work, no doubt; but we believe it to be a correct one, so far as it goes. The facts, at least, are honestly stated. As for the opinions (especially many of those relating to recent times) we deem not a few of them to be extremely open to controversy; and while we thus express our general approbation of the performance, we reserve to ourselves the right of calling to account, at some future period, certain assertions which we here and there met with, and marked as matter for animadversion.

Lectures on the Means of Promoting and Preserving Health. By T. Hodgkin, M.D.

A great deal of useful popular information connected with medical subjects is contained in this small volume. The dietetic precepts are very good, and sometimes curious. Some political hints, interspersed in the notes to the third lecture, we could wish had been omitted: they are ill timed, and on the whole, we think ill judged. The lectures were delivered at a mechanics' institute five years ago, but of course have been so revised as to be properly adapted for present purposes.

MEDICAL GAZETTE.

Saturday, March 14, 1835.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

Cicero.

THE PROPOSED TRAFFIC IN DEGREES.

Moneychangers, we believe, were never proverbial for their modesty; nor those involved in ruinous speculations remarkable for the moderation of their efforts to extricate themselves, when thoroughly awake to their danger. Drowning men are known to catch at straws: too often, however, they do worse—they lay hold of their good-

natured but unwary neighbours who venture too near them, and the safety and very existence of the whole party is at once thrown into imminent peril.

We cannot think of the state of things in Gower-Street, nor of the desperate efforts meditated and being practised by some of the shareholders of the joint-stock school there, without having some such image as this present to our minds. The report relating to the financial concerns of the establishment we noticed briefly in our last number: the particulars which we added respecting the proceedings at the meeting—the proposal of one of the proprietors to abandon the "shares," as affording only a "desperate prospect," and the indignant refusal with which that proposition was received—must have prepared our readers for hearing of any other forlorn attempt on the part of the speculators to meet the emergency in which they are placed; and such is the purpose of their approaching appeal to parliament.

We could pity, and perhaps lend a hand to relieve them in their necessity, but that their efforts to keep afloat are not of the most virtuous or praiseworthy description: we see them wilfully diverging from the plain, straight-forward, and, in the end, the most practical and safe course, which people of upright minds would endeavour to persevere in; we discover them grasping not only at things beyond their reach, but at what it would be highly improper for them to possess; and, beholding this, can it be wondered at that we spurn them from us, and leave them to the advocacy of their hirelings?

From the very first we had our doubts of the good intentions of the Gower-Street proprietary. There were, indeed, among them, we were aware, many worthy individuals, really desirous of procuring for their fellow-citizens of more limited means, as well as for their own families, the opportunity of a cheap and good education, and willing to contribute funds liberally for the attainment of so desirable an object; but we could not help observing the large number of Jews and Gentiles who had got amongst them, persons whose main object was of a very different nature, and who, in short, were more frequently to be met with about 'Change than in the halls of philosophy or religion. Our appprehensions were justified ere long. The money-seeking proprietors went on cautiously for a time; but not succeeding according to their wishes, or rather, their speculation becoming utterly desperate, off went the mask of decency, and behold them intent upon the scramble. Nothing now can check their eager anxiety to retrieve their losses, at whatever risk of repulse or exposure. Not content with their defeat, upon being deliberately and patiently heard by the Privy Council, on which occasion *Lord Grey's cabinet, after the pleadings had been heard, were unanimous against them*, they would fain avail themselves of the "crisis" in the political world to work up their pecuniary concerns into something resembling a party question. It remains to be proved whether parliament and the public will suffer themselves to be imposed on.

Can any thing be more preposterous and barefaced than the humbug of this mere medical school, calling itself a "University?" A charter it might have had long since, like any other trading company, founded and supported, as it is, by money subscribed in shares: but, no—this would leave it to work its way too slowly for those who calculated on a quick return for their outlay. The charter is disdained, unless it can be procured together with a privilege of trafficking in degrees; the parties well knowing that with such an

instrument in their hands, they may laugh at all their metropolitan and provincial rivals, and instead of being simply *a* school of medicine—one of the many—become at once *the* school of medicine of the metropolis, setting at defiance the competition of all other similar establishments.

Yet if the grounds of these claims for monopoly be inquired into, none other can be assigned save those of gross presumption combined with sharp necessity. The project was started in the report for 1833, in which, after stating the embarrassments of the institution, and the utter inability of commencing another session without some new source of relief, it was explicitly avowed that "the first *scheme* which presented itself to the council as favourable for the support of the institution, was, if possible, to obtain a charter enabling it to grant degrees in subjects not theological." So that by their own shewing it is no zeal for the promotion of literature or science that induces them to persevere in seeking for exclusive privileges, but confessedly the main object is by this "scheme" to prop up the declining fortunes of the establishment.

But suppose, for a moment, that through some infatuation, or factious resistance to the dictates of reason, a majority in the House of Commons should be found to support Mr. Tooke's motion on the 26th, who are the parties on whom this important privilege is to be conferred? Who *are* the influential persons that constitute the chief portion of the proprietary in this, or in any other joint-stock concern? Without doubt, those who have most shares in the speculation—the most monied shareholders, whether they be Jews, pettifogging lawyers, or quack-doctors. The shares are for sale on 'Change at prices more than 75 per cent. below their nominal value; and if Morison, of quack-pill-notoriety, choose to be a purchaser to a considerable amount (if, indeed, he be not so already), *he*, along with any other spirited and monied charlatans about town, may become the rulers of the destiny of the new joint-stock-medical-degree-conferring establishment; and the rising generation of practitioners in London will have the satisfaction of deriving their professional powers and privileges from a body, of which Messrs. Morison, Eady, and Co. may be the head!

There is no alternative. As long as the school in Gower-Street, which now sets forth its extravagant and impudent pretensions, is a joint-stock speculating company, with shares transferable and purchasable in the market, so long will it be dangerous to commit to it the power of qualifying by a diploma practitioners either in law or physic for the public service. Were the place endowed with landed property — not chargeable with the ruinous practice of borrowing money on mortgage—in short, possessed of any stability (nay, we might say respectability) in the eyes of the community—there might then probably be some shadow of a pretext for entrusting it with certain limited powers for the conferring of honorary titles; but even then, the idea of giving it any privilege not shared by the other schools could not for a moment be entertained. But nondescript and tottering as this unchartered *soi-disant* University is at present, every body, except perhaps the disappointed shareholders involved in the concern, must see the propriety of not burthening it with *any* privileges, which could only prove at once a mockery to itself and a mischief to the public.

FORCIBLE SURGERY.

The almost incredible story to which we alluded last week, of a clergyman and surgeon having forcibly sub-

jected a lad to the operation of lithotomy, has, we find, some foundation in fact, and is to be made the subject of legal proceedings against the parties. We shall lay the particulars before our readers at the proper time; to do so at present might interfere with the course of justice. When we first heard of it, presuming that no one could have been guilty of so insane a proceeding, we took it for granted that the story had been trumped up, and palmed off on our contemporary, as a quiz upon his proverbial appetite for slander; but we have ascertained that the account in the Lancet, though infinitely beyond the truth, was not altogether without foundation;—an acknowledgment which candour induces us to offer even to the most thoroughly dishonest opponent that ever journalist had to deal with.

As this sheet was passing the press, we received the Lancet of this day, by which we perceive that the other instance of "forcible surgery" to which we alluded last week, has not been lost upon it. Our worthy and veracious contemporary has been pleased to inform the public that the anecdote was given on the authority of Dr. Macleod, and referred to an occurrence at the North London Hospital: the former assertion is not true; and the latter, (we mean the application he has thought fit to make of the story), be it remembered, is entirely his own.

ADDRESS TO HIS MAJESTY,

FROM THE ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

To the King's Most Excellent Majesty.

We, your Majesty's most loyal and dutiful subjects, the President and Fellows of the Royal Medical and Chirurgical Society of London, beg leave to offer to your Majesty our most grateful acknowledgments for the high honour which your Majesty has been pleased to confer on us, by granting to us your Majesty's Royal Charter of Incorporation; and for your Majesty's gracious condescension in becoming the Patron of our Society.

It has been our earnest endeavour, during a long series of years, to support, in our publications and our meetings, that character for liberal and useful acquirements which the medical profession has always possessed in your Majesty's dominions.

In the sanction and encouragement which your Majesty has been graciously pleased to give to our exertions, we view the means of augmented stability and usefulness; and we venture humbly to assure your Majesty, that, as the best mode of evincing our grateful sense of your Majesty's favour and protection, we shall at all times continue to keep steadily before us, as objects of manly and honourable emulation, the successful efforts of the great scientific bodies of the country, which, under the fostering and invigorating influence of your Majesty, and your illustrious predecessors, have so largely contributed to render your Majesty's kingdom pre-eminently distinguished in every department of human knowledge.

That your Majesty may long live in the affections of your subjects, the indulgent promoter of whatever is conducive to their welfare and happiness, and the benignant encourager of every worthy exertion, is our ardent and anxious wish.

Sealed with the common seal of the society, and signed by the authority of a general meeting of its Fellows, on the 18th day of February, 1835.

John Elliotson.
Astley Paston Cooper.
John Yelloly.

LECTURES
ON
DISEASES OF THE RECTUM;

Delivered at St. George's Hospital,

By Sir B. C. Brodie, Bart.

Lecture II.

HÆMORRHOIDS—OPERATION.

Different methods have been proposed for destroying hæmorrhoids by operation: some surgeons have practised and recommended that by excision, while others have preferred the removal of them by ligature; others speak of the ill consequences attendant on each of these modes of operating.

It appears to me that the question respecting the operation and the proper rule

of treatment has been very distinctly and correctly laid down by Sir Everard Home, in a paper on that subject, at the end of his work on Ulcers of the Legs. He states the matter thus:—That external piles which are covered by the skin ought not to be removed by ligature; if they are removed at all, it ought to be by excision. On the other hand, internal piles which are covered by the mucous membranes, ought, *for the most part*, to be removed by ligature. In short, the ligature is applicable generally in cases of internal piles, and excision to those which are external. The grounds of this distinction are as follow: The application of a ligature to external piles gives the patient extraordinary pain at the time, and afterwards excites much inflammation, swelling, and disturbance of the general system; whereas, if they be removed by excision, these ill consequences are avoided. After the excision of *external* piles, there can be no danger of hæmorrhage, because the parts are entirely within your reach, so that the bleeding vessels can be easily secured; and though some little inflammation may supervene on the operation, yet it is not sufficient to be of any real consequence. If, however, you remove large *internal* piles by excision, there may be copious and even dangerous hæmorrhage, since the parts which bleed are out of reach, above the sphincter muscle, where you cannot expose the cut surface, so as to be enabled to take up the bleeding vessel. On the other hand, the application of a ligature to internal piles in general causes but little pain, and only a slight degree of inflammation follows, for the mucous membrane has nothing like the sensibility of the skin, and does not resent an injury in the same manner. With respect to internal piles, then, there is no objection to the use of the ligature, while there is the greatest objection to their simple excision. This is the doctrine which I was taught by Sir Everard Home in this hospital when I was a student. But I met with a copy of Mr. Cline's Lectures on Surgery, in which he stated that he removed internal piles by excision; and this observation was added—"a timid surgeon removes them by ligature." Knowing Mr. Cline to be a very cautious practitioner, I thought that in what he recommended there could be no kind of danger, and for some time, therefore, I was led to follow his suggestion. In the first one or two cases I found no inconvenience to arise from my altered practice; but then a case occurred in which the patient lost a great deal of blood; in another case, the hæmorrhage was so great that the patient nearly died; and then a third case occurred, in which also the patient lost an enormous quantity of blood—so much, that I now only wonder that he did not actually die. Since then I have never removed large internal piles except by ligature.

The removal of external piles is very seldom necessary: they are generally complicated with internal piles; and if you cure the former, the latter, which are a continuation of the same veins, will be cured also. However, there are cases in which it is right to remove external piles by incision. For example, where they are enlarged and inflamed, so that it will take a great deal of time to subdue the inflammation, and the patient is all the while suffering pain, he may be relieved at once by two or three snips of curved knife-edged scissars. Or if an abscess has formed in an external pile, which bursts, discharges, and closes at the orifice, then bursts and discharges again, it may be worth while to cut off the pile and the abscess with it.

The excision of external piles is easily accomplished by means of the scissars which I have just mentioned. You take hold of the pile with a double tenaculum, elevate it a little from the base, and then snip it off. If there be a little artery bleeding considerably, you take up the vessel as you would on any other cut surface.

I have said that internal piles are to be removed principally by ligature. You will observe I do not say they are *never* to be removed otherwise. The fact is, that when internal piles are small, it is not worth while to tie them; and they may under these circumstances be excised with perfect safety. Such a case as this will frequently occur:—a patient complains of symptoms of internal piles; he has always pain about the anus, and a discharge of mucus. You examine the parts, and find a pile, not larger than the end of your little finger, covered with the mucous membrane of the bowel, protruded, and, as it were, sticking in the orifice of the anus. You take hold of it with a double tenaculum, apply the scissars to the base, and no kind of inconvenience follows the operation. But whenever there are large internal piles, which protrude either constantly or occasionally, you ought not to venture to remove them except by ligature. In performing the operation by ligature, the first thing is to get the piles well protruded. For this purpose, you may make the patient sit over a pan of hot water, which will relax the sphincter muscle, and at the same time cause the veins of the rectum to become filled with blood. If this be not sufficient, let the patient have a pint or two of warm water

thrown up as an enema; and when that comes away, the piles will probably descend with it. The piles having been by these means brought properly into view, you may let the patient lean over a table, or lie on one side in bed, with his knees drawn up, the nates being held apart by an assistant. Each separate pile must be separately tied. If the pile be of a very small size, you may just take it up with a double tenaculum, draw it out, and tie a ligature round its base. But if the piles be of a large size, you should proceed in the following manner: have a large curved needle, armed with a strong double ligature; pass the needle, carrying the ligature after it, through the base of one of the piles, and then cut off the needle. The double ligature is now divided into two single ligatures, which are tied round the base of the pile, one on one side and the other on the other side, with a single knot. Treat all the piles in this manner; and as the ligatures are applied, let your assistant draw the several threads out of your way, holding them over the nates. When each of the piles is secured in this manner (and there may be two, three, four, or five, to be thus treated), you then proceed to another step of the operation: cut off the convex portion of each pile, so as to make an opening into the cavity of the convoluted vein which forms it. Thus you take off the tension produced in the pile by the blood which it contains, and are enabled to draw the ligature tighter than before. It should be drawn as tight as possible. As the ligature is tighter, so there is less pain afterwards; so also the slough separates sooner, and the more expeditious is the cure. You have now only to complete the double knot upon each of the ligatures, and cut off the threads close to the knots, returning the piles, ligatures and all, into the rectum. It is a very simple operation; and except when the piles are in a state of inflammation, attended with but little suffering. You are to take care, in performing it, to keep all the ligatures clear of the external parts; for if they include any of the skin, the patient suffers a great deal of pain, and much inflammation will supervene. I generally give a pretty active dose of rhubarb the day before the operation, so that the bowels may be well emptied, and that the patient may afford to go for two or three days after the operation without having an evacuation.

It very seldom happens that inflammation or fever follows the use of the ligature, and the threads generally separate at the end of a week,—not that I look for their separation, for it is of no consequence whether they come away a day sooner or a day later. I never trouble my head about the ligatures after they have been once applied; but if you choose to look for them, this is the time at which you will find that they usually come away.

But the patient must now take measures to prevent a recurrence of the disease. For this purpose, when there has been time for the sores left after the separation of the ligatures to have healed, I recommend him to take some lenitive electuary and sulphur every night, so as to keep the bowels gently open, and to use a lavement of cold water every morning.

I conceive that this is not only one of the most effectual, but one of the safest operations in surgery. I should think I must have performed, or seen it performed, between 200 and 300 times. I saw one patient who died after the operation, in consequence of diffuse inflammation of the cellular membrane running up on the outside the gut as high as the mesentery; but that was a patient whose constitution was broken down by long-continued hæmorrhage, and in whom any slight accident might have produced equally bad consequences. I saw another patient, who, a week after the operation, and having been quite well in the interval, had an attack of pain in the abdomen, and shivering attended with fever, and died. I was not allowed to examine the body after death. I could not make out at the time that the symptoms had any connexion with the operation, nor do I believe that they had; but I mention the case because, as the body was not examined after death, I have no certain knowledge on the subject.

With the exception of these two cases, out of all the 200 or 300 patients whom I have known treated in this manner I never knew any ill consequences to arise. I contend, then, that the operation is as safe as any operation can be expected to be. You are not to suppose that even the slightest operations in surgery are absolutely, in all cases, free from every particle of danger, any more than the slightest accident. I have known two patients die after the extraction of a tooth, and I have known several die in consequence of venesection at the arm, or an accidental prick of a finger. The chance of danger from this operation at any rate is so trifling that you need not calculate upon it. If you were to calculate upon so small a chance as this, you would scarcely be able to do any thing in the common affairs of life.

Supposing a person has piles which come down when he walks, which are constantly teasing him in this way, and yet he cannot make up his mind to submit to an operation, or that there are any circumstances that lead you to think it better not to have recourse to it, still you may

do something for his relief. There is a machine made for the purpose of supporting the bowel, and preventing the protrusion of the piles. It is sold under the name of a truss for the *prolapsus ani*, the makers of it confounding, as I have told you is often done even by surgeons, internal piles with prolapsus of the rectum. It is made with a spring which fits round the pelvis, and so far resembles a spring truss for a hernia; but at the back part, fixed at right angles to the circular spring, there is another spring which descends behind the sacrum, taking the course of that bone, and terminating below in a pad, which rests on the anus. The elasticity of the spring supports the pad, keeps it pressed against the anus, and prevents the protrusion of the internal piles.

PROLAPSUS OF THE RECTUM.

I have just observed, that it is very common to confound *prolapsus of the rectum* with internal piles. This error is committed not only in common conversation, but by surgical writers; and hence it is that no good account, so far as I know, has ever been published of the first-mentioned disease. But the difference between internal piles and real prolapsus of the rectum is this: in the protrusion of the former, the mucous membrane covering them descends, and may be seen below the anus; but it is only the mucous membrane, there is no descent of the muscular tunics; whereas, in the latter, the whole of the rectum comes down, and sometimes as much as twelve inches in length. I have never dissected a case of prolapsus of the rectum; but it is impossible to examine a genuine instance of this displacement in the living person without being satisfied that the muscular tunic is protruded, as well as the mucous membrane. There being such a marked difference between prolapsus of the rectum and internal piles, nothing can be more absurd, or unscientific, than to confound these two diseases with each other.

It is not remarkable that the whole of the tunics of the rectum should sometimes protrude in this way. Look at what happens to the bowel above. Do you not find one portion of it slipping into another in the case of intro-susceptio? and prolapsus of the rectum is just the same thing. If one portion of bowel slips into another, why should not the rectum slip out at the anus?

Prolapsus of the rectum occurs most frequently in children, and especially in those with large tumid bellies and costive bowels, where the whole mass of the intestine becomes too large for the cavity which contains it. Simple dissection will inform you why children are more liable to this disease than grown-up persons; it is because the prostate gland, urethra, vesiculæ seminales, and all these parts, are not so much developed as in the adult. The attachment of the rectum to the surrounding parts does not extend so high in children as in persons of mature age, while the reflection of the peritoneum takes place lower down, and hence the rectum is more liable to be pushed out.

In adults prolapsus of the rectum sometimes occurs as a consequence of piles. The patient having been liable to the protrusion of internal piles, and the sphincter muscle having been thus continually dilated, the rectum is more liable to slip out, as you may well suppose, than it would be if this dilatation had not taken place. However, in grown-up persons the disease is comparatively rare. I see it every now and then, but very seldom; and where you meet with it in the adult, it has generally begun in early life.

When prolapsus of the rectum is combined with internal piles, you will see the latter at the upper part of the prolapsus—that is, close to the orifice of the anus, forming a zone around the gut; and the colour and appearance of the mucous membrane covering the protruded piles is altogether different from that of the membrane covering the rest of the gut.

The inconvenience which the patient suffers from prolapsus of the rectum varies very much in different cases. Sometimes it comes down occasionally after a costive motion only, and is easily pushed up; and when pushed up it remains in its place till some accidental circumstance brings it down again. In other cases you return it, but the moment the patient begins to walk about, down it comes again; and in instances of long standing, the bowel becomes so fixed in its unnatural position, that you cannot return it by any means, and then other inconveniences follow. The rectum having been constantly protruded, becomes inflamed from friction, ulcerated, sore, tender, painful; and where the protrusion has existed for a long time, you will find it covered by a kind of cuticle.

Treatment.—When you are called to a child labouring under prolapsus of the rectum—and these are the cases that you most frequently meet with—you will almost invariably relieve him in the following manner:—Purge him with calomel and rhubarb occasionally; be very careful about his diet, that he does not eat a great quantity of vegetable substance, which tends to fill up the cavity of the bowel, while it affords but little nourishment; and every morning let some astringent injection be

thrown up. The injection which I have generally used is a drachm of tinct. ferri muriatis, in a pint of water; and two or three ounces, or more, of this, according to the age of the patient, may be injected into the rectum every morning, the child being made to retain it as long as possible. I never saw a case of prolapsus of the rectum in a child, which was not cured in this manner.

If you are consulted about an adult labouring under this disease, and it has been consequent on a protrusion of piles, the first thing to be done is to destroy the piles. Let the patient sit over a pan of hot water, and the sphincter muscle being relaxed and the parts distended with blood, the piles and rectum will all protrude together: you must then tie the piles, which you can easily do, your assistant holding the rectum on one side, while you apply the needles and ligatures on the other. Having tied the piles, you return the rectum into its proper place; and you will probably find, that in curing the piles you have also remedied the prolapsus of the bowel. But if the patient neglects himself afterwards, as the piles return so the prolapsus returns with them.

Where the disease is not complicated with piles, in those cases which occur occasionally in which prolapsus of the rectum has begun in early life, and has continued to adult age, the cure is very difficult, and perhaps impossible. The patient must be retained in the horizontal posture, for then the rectum is much less likely to protrude than when he sits up: he ought not to sit up even for an evacuation, but should have a bed-pan. Whenever the rectum protrudes, it should be pushed up again; an astringent injection should be employed daily, and the patient should be put through a course of Ward's paste. This plan affords him the best chance of a cure which he can have, but I will not say that it will always be successful. I remember trying it for a great length of time in a woman in the hospital, and, after lying many weeks in bed, when she got up the rectum came down as before; nay, it came down sometimes when she was in bed, even in the horizontal posture. In these cases, however, you may employ with advantage the truss for prolapsus of the rectum, which I mentioned as applicable chiefly to bad cases of internal piles. There was a patient in the hospital (a soldier) who had, I suppose, eight or ten inches of the rectum constantly protruded, and it could not be returned. After trying various means for a length of time, he left the hospital as bad as when he came in, and I do not know what became of him. It occurred to me afterwards, that in such a case as this it might be advisable to apply ligatures, and then cut off the protruded gut; for though the disease is not immediately dangerous, yet it must be regarded as ultimately so; and it might be worth while for the patient to run some risk at the time, for the chance of subsequent cure. I do not know that such an operation has ever been performed; but is it not deserving of consideration whether we ought not to have recourse to it in certain cases? There is a natural cure of bad cases of intro-susceptio, the analogy of which is in favour of the practice which I have just suggested. In the cases to which I allude, one portion of gut being protruded into another, the protruded portion is constricted by the edge of that into which it has passed; the circulation in it is stopped, and it sloughs away as if a ligature had been put round it. In this manner a portion of gut, eight or ten inches in length, has sometimes come away, and the patient has lived and done well afterwards. Several cases of this kind are on record; and I once had an opportunity of dissecting a patient who died when the sloughing process was taking place. If such an operation as I have proposed were to be had recourse to, the gut must be included in several ligatures, so that the orifice of it may not be obstructed, as it would be by a single one.

EXCRESCENCES OF THE RECTUM.

Excrescences of various kinds take place on the inner surface of the rectum, which patients are very apt to mistake for piles. Here is one [presenting a specimen] —a sort of polypus. It is, as you see, of a small size, but I have seen them as large as the finger. It seems to be of the same structure as the polypus of the uterus. This kind of excrescence is by no means uncommon. Sometimes there is a single one; at other times there are two or three growing from the mucous membrane. In some instances they occasion the patient scarcely any inconvenience, while in others they give rise to the most extraordinary suffering. What is it that makes this difference? The patient suffers in those cases in which the excrescence comes down when the bowels act, and gets pinched by the sphincter muscles. Under these circumstances it is liable to become ulcerated, and then the pressure of the sphincter ani always induces excessive pain, which continues not only till the excrescence recedes, but for some time afterwards. A lady sent to me, complaining of what she called very bad piles. On examining the rectum, I discovered a little polypous excrescence, in a state of ulcera-

tion, sticking in the sphincter muscle. I took hold of it with a pair of forceps, and snipped it off with the scissors. She felt hardly any inconvenience from the operation, but, to her surprise, though she had been enduring a great deal of pain, and had been miserable for months, from this moment she was well. A lady, not long since, came to my house, from a distance in the country, in whom most severe sufferings were occasioned by one of these polypi being ulcerated and entangled in the sphincter muscle. I immediately snipped it off; she was completely relieved; went home, I believe, on the same day, and I have no doubt has been quite well ever since.

Excrescences of the rectum sometimes take place, of a large size, which are not of a malignant nature, such as you see here [exhibiting a preparation]. This I removed from an old lady, 80 years of age. She sent to me, complaining of pain about the rectum, and hæmorrhage. I thought there were probably internal piles, and that it was not worth her while, at so advanced an age, to go through any operation, and I prescribed her some trifling medicine. She sent to me again, to say that she had lost a great deal of blood, and could not pass an evacuation from the rectum without the greatest difficulty. I introduced my finger and found a large excrescence, of which this specimen is only a portion. It seemed to be a matter of necessity that something should be done for the patient's relief: I therefore introduced my fingers into the rectum, gradually dilated the sphincter muscle, took hold of the excrescence, pulled it down, tied a ligature round its neck, and then snipped it off below the ligature. No harm followed the operation; the patient was perfectly relieved, and lived some two or three years afterwards. I believe the excrescence returned before death, but still she suffered no inconvenience from it.

These excrescences [presenting a fourth preparation] were, I believe, originally external piles, and they are not very uncommon. I mentioned in the last lecture, that when the cavities of external piles become obliterated, they generally form flaps of skin, which gradually waste; but sometimes diseased action takes place in them, and they become converted into excrescences similar to those which grow from the nymphæ of women. They are generally connected with dirty habits: the parts get irritated by the dirt, and so the piles become converted into these excrescences, into which they would not be converted in a more cleanly person.

SUPPOSED ANTIDOTE FOR ARSENIC.

M. Bouley, junior, has presented a paper to the Académie de Médecine, containing an account of no less than eighteen experiments which he performed, in order to test the reputed efficacy of the hydrated protoxide of iron as an antidote for arsenic. The paper is to be published in the forthcoming fasciculus of the *Memoires* of the Academy. But it may be stated, that nothing can be more decisively negative than the evidence given on the subject by the author. The hydrated protoxide is of no more use as an antidote than so much charcoal powder.

EFFECTS OF KREOSOTE.

Several physicians of Munich have put to the test the antiseptic, desiccative, and styptic properties of this substance; and, if we may believe the journals, it has been used with the happiest effects in indolent, carcinomatous, and syphilitic ulcers, ringworm, itch, and caries. It is usually employed externally, pure, or in a state of solution, prepared by diluting kreosote with eighty parts of water. To obtain a more concentrated water of kreosote, a gros (59·1 Troy) of this substance is dissolved in two ounces of alcohol, and a few drops of the solution added to the water, till it becomes opaque. It is highly useful in arresting caries of the teeth. Internally, it has been used in dysentery by Reichenbach, who is of opinion that the inhalation of the vapour would be advantageous in suppurations of the trachea and bronchial tubes. From the experiments of several physicians at Munich, it would appear that its action is only topical, and that it is not absorbed. In one experiment, the carotid artery of a dog was cut through, and the bleeding was stopped by pressing it with the finger. The blood did not flow, and the wound healed in a few days without a bandage. Is this credible?—*Edinburgh Medical and Surgical Journal.*

A SURGEON ASSASSINATED BY HIS PATIENT.

A very shocking occurrence of this kind happened on the 19th ult., at St. Antonin, in Guyenne. M. Prestat, of Caylux, had trephined a patient who a few days previously had suffered a severe fracture of the skull from a violent blow. Mania of

a masked character supervened; nobody had the least suspicion of it, much less the unfortunate victim, M. Prestat, who, on approaching the bed to dress his patient, received from him a deep and deadly wound in the abdomen. The fatal mischief was done with a knife which had been incautiously left within the reach of the patient, and secreted by him for the purpose. M. Prestat expired after lingering in much torture for eight hours. The wound measured six inches in length along the linea alba, and was inflicted from below upwards, beginning a little above the navel, involving more or less all the viscera in the upper part of the abdominal cavity.—*Gaz. des Hôpitaux.*

BARON DUPUYTREN'S POMATUM,

FOR PREVENTING THE FALL OF THE HAIR.

Of Tincture of Cantharides, 10 parts.
Hogslard, 90 parts.

To be well mingled together, and rubbed into the roots of the hair.—*Gaz. des Hôp.*

It should be observed, that the tincture of cantharides here prescribed is much stronger than that used in this country: it is made with one part of cantharides powder to eight of alcohol, carefully filtering the mixture after it has stood for some time.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

March 12, 1835.

Pelham Aldried, Stowmarket.
William Cass, Liverpool.
Esquire Dukes, London.
George John Marris Wilson, Greenhithe, Kent.
Joseph Charles Shelton, Bromyard.
Daniel Barker, Bransdale, Yorkshire.
Lewis Redwood, Boverton, Glamorganshire.

LITERARY INTELLIGENCE.

Mr. Swan is preparing for publication, Illustrations of the Comparative Anatomy of the Nervous System. The first fasciculus, containing eleven quarto plates, beautifully executed on steel, by Finden, will be ready about next Christmas.

NEW MEDICAL WORKS.

Outlines of Comparative Anatomy, by R. E. Grant, M.R. Part I. 8vo. 7s. sewed.

Chemical Attraction: an Essay. By G. L. Hume. 8vo. 5s. bds.

Practical Compendium of the Diseases of the Skin. By J. Green, M.D. 8vo. 12s. boards.

Consumption; why so Fatal? By John Tyrrell. 8vo. 5s. bds.

Manual of Experiments illustrative of Chemical Science. By John Murray. 4th edit. 12mo. 5s. bds.

Treatise on Headaches. By G. H. Weatherhead, M.D. 12mo. 3s. 6d. cloth.

Human Physiology. By Dr. Elliotson. Part I.; containing General Physiology and the Organic Functions. 8vo. 10s. 6d. sewed.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *March* 10, 1835.

Abscess	4	Bowels & Stomach	4
Age and Debility	37	Brain	2
Apoplexy	5	Lungs and Pleura	7
Asthma	20	Insanity	3
Cancer	4	Liver, diseased	3
Childbirth	2	Locked Jaw	1
Consumption	61	Measles	11
Convulsions	21	Mortification	3
Croup	2	Paralysis	4
Dentition or Teething	7	Rheumatism	1
Dropsy	11	Small-Pox	11
Dropsy on the Brain	6	Sore Throat and Quinsey	2
Dropsy on the Chest	2	Spasms	1
Fever	4	Stone and Gravel	1
Fever, Scarlet	3	Thrush	1
Fever, Typhus	1	Unknown Causes	8
Gout	1		
Hooping Cough	29	Stillborn	11
Inflammation	24		

Decrease of Burials, as compared with the preceding week . . . 71

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, *Latitude* 51° 37′ 32″ *N. Longitude* 0° 3′ 51″ W. *of Greenwich.*

Feb. 1835.	THERMOMETER.		BAROMETER.	
Thursday . 26	from 38	to 49	29·36	to 29·29
Friday . . 27	34	49	29·32	29·42
Saturday . 28	28	46	29·56	29·72
March.				
Sunday . . 1	27	43	29·28	29·74
Monday . . 2	28	43	30·00	29·95
Tuesday . . 3	34	46	29·90	29·82
Wednesday 4	30	49	29·76	29·58

Wind variable, S.W. prevailing.

Except the 28th ult., cloudy, with frequent rain.

Rain fallen, 1 inch and ·025 of an inch.

Thursday . 5	from 26	to 43	29·50	to 29·40
Friday . . . 6	37	47	29·34	29·44
Saturday . 7	29	45	29·45	29·36
Sunday . . 8	28	46	29·39	29·65
Monday . . 9	32	47	29·30	29·11
Tuesday . 10	31	51	29·04	29·61
Wednesday 11	40	51	29·55	29·47

Frequent strong gales from the W. and S.W.

Except the 8th and 10th, cloudy, with frequent rain; very vivid lightning on the morning of the 6th, accompaned by hail.

Rain fallen, ·9 of an inch.

CHARLES HENRY ADAMS.

WILSON & SON, Printers, 57, Skinner-St. London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, MARCH 21, 1835.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture XXV.

DISEASEAS OF THE LARGE BLOOD-VESSELS.

ANEURISM OF THE AORTA.

We now arrive, gentlemen, at the consideration of one of the most important diseases which affect the animal economy; I mean aneurism of the aorta. Such is the admirable description of this affection given by Laennec, that I can do no better than follow it; exemplifying it, as I shall be enabled to do, by a series of preparations, illustrative of almost every point of the morbid anatomy of the disease, described by that great pathologist.

By aneurism, we mean the dilatation of an artery, or its communication by an opening, more or less large, with a sac formed by its external coat, and occasionally also by the organs immediately surrounding the diseased vessel. The first species is called *true aneurism;* the second, *false consecutive aneurism.* A combination of the two species often also exists—that is, a true aneurism may be surmounted by a false consecutive one.

True aneurism.

Morbid anatomy.—True aneurism of the aorta is not an uncommon disease, particularly in the ascending portion of the arch of that vessel. The disease commonly extends from the origin of the aorta to its descending part: the centre of this space, often presenting the breadth of three or four fingers, is usually the most dilated. The convexity of the arch and the anterior part of the artery are generally more enlarged than its posterior parietes. When the dilatation occurs in the descending aorta, it forms an ovoid or fusiform tumor, and sometimes there are several of these tumors in the course of the same vessel. [Specimens shewn.] When the dilatation occurs at the space from whence the innominata arises, that vessel, and often also its primary branches, are similarly affected: the left subclavian artery, however extensive the aneurism may be, generally preserves its natural caliber. Occasionally, especially in old persons, the descending aorta, to its iliac divisions, becomes double its ordinary breadth; the ascending aorta and its arch are then also somewhat dilated.

Other arteries are subject to this species of simple dilatation: thus the carotid, at its emergence from its canal in the temporal bone, and the temporal artery to its minutest ramifications, have been seen in this state. Sometimes the arterial capillaries are also found enlarged, forming the principal part of erectile tumors: these have received various denominations—as nævus, fungus hæmatodes, varicose tumors, and aneurisms by anastomosis.

Slight dilatations of the aorta have rarely received the name of aneurisms, that expression being reserved for larger dilatations: yet the disease in both cases is the same, the difference being only in degree. The largest true aneurisms form at the ascending portion of the aorta and its arch: they have been seen of various sizes, up to that of the head of a full-grown fœtus. When a true aneurism becomes large, a false consecutive aneurism often forms upon it, thereby augmenting its volume. [Specimens shewn.]

The internal membrane of the aorta is often affected in this disease; red points

and slight cracks are seen upon it, and numerous incrustations are often placed between the internal and fibrous coats: these cracks, or fissures, correspond with the edges of the incrustations, and the internal surface of the vessel becomes therefore rough and unequal. On examining the parietes of the artery by a transmitted light, it will be seen to shew various degrees of transparency, from the thinning of the fibrous coat produced at different points, in consequence of the action (probably mechanical) of the phosphate of lime upon it. In some cases these rough surfaces entangle portions of the blood, which then concrete; this matter accumulates, and occasionally forms a series of layers of fibrine, similar to those we shall describe as contained in the sacs of false aneurisms. [Specimens shewn.]

False consecutive aneurism

Is defined to be a tumor placed along the external surface of an artery, and communicating with it by an orifice of greater or less diameter.

The sac of a false is generally more unequal in thickness than that of a true aneurism. It is formed by the cellular coat of the artery, and is occasionally increased in its strength at different points, by cellular tissue, and by the organs around it. In other cases it is almost as thin as a sheet of paper. Its internal surface is very rough, but the orifice of communication is almost always smooth.

False aneurisms are formed most commonly in the descending aorta. When they are placed in the ascending part of that vessel, or its curve, they are generally superadded or attached to a true aneurism. The descending aorta, however, is rarely dilated at the point from which the false aneurism springs; it is often, indeed, contracted.

Causes of aneurisms.—The simple dilatation of an artery, or true aneurism, is no doubt formed by the impulsion of the blood against the parietes of the vessel, already weakened by disease, as by osseous or cartilagenous deposits; and we find that the dilatation is always greatest where the force of the impulsion is more particularly directed. Thus the ascending aorta and the anterior part of its arch are always most enlarged, whilst the posterior parietes of the arch rarely enter into the aneurismatic dilatation, in consequence of the greater resistance they afford to the impetus of the blood, from their being placed against the unyielding dorsal vertebræ.

Although the formation of a true aneurism can easily be explained in this manner, yet many opinions have been entertained as to the modes in which a false membrane originates. Thus some have supposed, in consequence of the smoothness of the orifice of communication, that the internal membrane of the artery formed a hernia through a rupture of the fibrous coat of the vessel, and lined the whole of the aneurismal sac as it gradually extended and increased in volume; so that the sac was formed of the external cellular investment of the artery and of its internal tunic. Such was the opinion of MM. Dubois, Dupuytren, and many others: but it is impossible to trace the smooth internal membrane beyond a few lines within the sac, except the aneurism be very small—no larger than a nut, for instance. In all probability, as the aneurism enlarges, the internal membrane breaks at a short distance from the orifice of communication; the internal part of the sac then becomes rough and irregular. An aneurism supposed to be formed in this manner, was called *aneurisma herniosum*, *aneurisma herniam arteriæ sistens*, or *mixed aneurism*.

Scarpa believed that no aneurism took place without the rupture of both the middle and internal tunics of the artery, and that the sac was formed of the cellular coat of the vessel alone. He went so far as to say that the true aneurism of authors had no existence—that the dilatation of the aorta near the heart could not be called an aneurism, and that that dilatation was never to be found in the remaining part of the course of the vessel. It is singular that the latter opinion should be held by so great a pathologist. You see before you, on the table, preparations of dilatations of the descending aorta and of the primitive iliacs—dilatations containing layers of fibrine as distinct as those we shall presently find existing so commonly in false aneurisms.

But that the opinion of Scarpa is correct, as to the mode in which false aneurisms originate, is most probable: that is, that it is caused by a rupture of the middle and internal coats of an artery, through which the blood insinuates, and gradually, by its accumulation, dilates the distensible cellular coat of the vessel so as to form a sac.

The rupture of these two coats may, though very rarely, be distinctly seen. M. Ambroise Laennec has detailed a singular instance of this state. The arch of the aorta was encrusted with osseous deposits, and was also dilated to the volume of a moderate-sized apple. The descending aorta, at about two inches from its origin, presented a transversal slit through its internal and fibrous coat, occupying about two-thirds of the contour of its cylinder; the edges of this slit were thin, unequal, and torn; the cellular coat was healthy, but separated from the fibrous, from the

point of rupture to the primitive iliaes, so that the cavity of the artery was divided into two parts by an intermediate partition. This separation of the fibrous coat was not complete; it occupied about one-half or two-thirds of the surfacc of the vessel, and turned in some parts around its cylinder. The space between the scparated fibrous and cellular coats was filled by clots of blood, or by fibrinous or polypiform concretions. Mr. Guthrie has met with two cases analogous to this, and Mr. Hodgson mentions a similar instance.

I presnt you, gentlemen, with two beautiful specimens of this sudden rupture of the internal and fibrous coats of the aorta; for the one I am indebted to Dr. Langmore, of Finsbury-Square; for the other, to Mr. Bennett, of the Commercial Road. The first occurred in a woman, who, during a slow convalescence from typhus fever, became from some cause suddenly alarmed; she instantly fell into a state of syncope, from which she shortly rallied, but died in about twenty hours after.

On examining the aorta, you perceive that at about an inch from its origin, its internal and middle coats, to nearly one-half of the circumference of the vessel, are ruptured transversely, the edges of the torn membranes being thin and unequal: the blood passed through the rupture, and completely separated the cellular from the fibrous tunic, and formed a continuous clot between them; the clot, you see, is preserved, and forms a fourth coat completely round the vessel. The artery must have remained in this state for many hours; at last, the blood, by continually distending the cellular coat, ruptured it also nearer to the origin of the aorta, so that that fluid poured into the pericardium, filled it, and prevented the further movements of the heart. The second specimen was from a man who suddenly fell in the strcet in a state of syncope; he recovered for a short time, but died five hours afterwards. The pericardium was found filled with blood, and the same rupture was found as in the preceding case; it was, however, not in a transversal direction, but extremely irregular, and the bursting into the pericardium was by a number of small orifices. You observe also in both these preparations the internal surfaces of the aorta are diseased, in consequence of cartilaginous deposits between their internal and fibrous coats.

In these cases the ruptures were too large, and the effusion of blood too sudden, to dilate the cellular coat into an aneurismal sac; but solutions of continuity are effected slowly in the internal membrane from the artery, either by small pustules, slight ulcerations, and above all, by the partial separations of osseous or cartilaginous incrustations from the fibrous coat. These separations form cracks on the internal surface of the vessel; small coagula are lodged within them, by which the fibrous membrane becomes still more diseased, and finally perforated; the coagula increase, gradually press upon the cellular coat, and distend it; the pressure of the circulating blood increases that distension; the cellular coat still farther enlarges, and finally, though very slowly, forms a sac, the original diseased part of the vessel being the point at which the orifice of communication ultimately forms.

This is the mode in which the false consecutive aneurism is commonly formed, although it is probable that when the sac is very small, and its internal surface is smooth, the internal membrane may have perforated the fibrous coat, distended with and lined its cavity.

Concretions of blood in aneurismal sacs.—In all false, consecutive, and in many true aneurisms, the internal parietes of the aneurismal sac are lined by a series of layers of coagulated blood, evidently deposited at suecessive periods, and presenting different appearances, according to the date of their formation; thus, those which are nearest to the orifice of communication with the artery are formed of blood more or less coagulated; a little farther, the clots are drier, and mixed with a large proportion of fibrin; deeper still, the layers are of a purer fibrine; they are then white or yellowish, firmer, less humid, and more opaque; below these, layers of a similar colour are often found, which have a certain degree of brittleness, are of the consistence of dried paste, and may easily be broken down by the fingers; the last described layers are in contact with and adhere to the parietes of the sac. Sometimes they are softened to the consistence of "bouillie," and they are formed of fibrine, more or less advaneed into a state of decomposition.

These are the characters of the fibrinous layers usually found in false consecutive aneurisms [shewing them], but there are also occasionally found others, which, when cut in fine slices, are semi-transparent; they are of a greyish-brown colour, having whitish veins ramifying within them. This substance is like horn softened by heat; it is very compact, easily cut, and leaves no moisture upon the scalpel; its thickness is frequently very considerable, especially in large aneurisms.

The blood often insinuates itself between these fibrinous layers, and separates them from each other, so that fresh coagula are frequently found between deposits of older formation. The blood often also

separates the external layers from the parietes of the sac, penetrates it at its weakest point, and occasionally destroys life in a moment by the quantity that is poured out.

These layers are generally numerous, in proportion to the size of the sac. False consecutive aneurisms are usually entirely filled by them, but that nearest to the opening into the artery often consists of a mere clot of blood, probably formed after death. In moderate dilatations of the aorta these concretions are rare, their formation being prevented by the rapid current of blood passing through the vessel. I have occasionally, however, seen the aneurismal dilatation so nearly filled with coagulated layers of blood, that the passage of that fluid was considerably obstructed. You perceive, gentlemen, that that was the case in this preparation, in which there is a true aneurism of the descending aorta, and one smaller one in each of the primitive iliacs.

The effects of aneurisms upon the surrounding organs.—When the aorta is simply dilated, it rarely produces any serious effects upon the surrounding organs, except the dilatation be very considerable; but the smallest false consecutive aneurism, or even a true one, in which the dilatation is confined to one side of the vessel, forming a projecting tumor, may occasion the most serious consequences.

The effects of the aneurismal tumor, as it increases in volume, are to compress the organs in contact with it. When the tumor is very large, or when, by its position, it becomes a cause of very considerable pressure, it often changes the position of the surrounding parts, which then apply themselves to it so as to form its external parietes. Thus, in an aneurism placed at the extremity of the thoracic portion of the aorta, or at the origin of the cæliac artery, the distended and flattened pillars of the diaphragm cover the lateral and even the anterior part of the tumor; the vessels, nerves, and cellular tissue, spread over the sac, as well also as the pleura or peritoneum.

The next effect of the compression of the aneurismal swelling is to attack the structure of the organ with which it may be placed in contact; thus, it may alter and destroy a portion of the pulmonary tissue, so that the aneurism may burst into the air vesicles. [A specimen of this rupture shewn.]

Aneurisms of the ascending aorta, or of its arch, often compress the trachea, or one of the bronchial tubes, and flatten them; the cartilaginous rings of these vessels become finally destroyed, and aneurisms, by bursting into them, cause a fatal hæmoptysis. [Specimens of these accidents were shewn.]

The œsophagus has been similarly compressed and perforated, producing a fatal vomiting of blood. [Specimen.]

The heart may alter its position, if the aneurism be large; thus, if the disease be situated above it, that organ is pushed downwards; if below it, upwards; or it may be forced to the right or to the left, according to the position of the compressing cause. Aneurisms have been seen to burst into the pericardium; but these cases are rare.

I present you with a rare specimen of aneurism of the ascending aorta, destroying the coats of the pulmonary artery, into which vessel it ultimately burst.

When an aneurismal sac ruptures into the pleuritic cavity, it is generally into that of the left side; it is very rare to find it open into the right.

Aneurisms have been seen to compress the thoracic duct, and occasion engorgement of the lacteals. Corvisart saw an aneurism of the ascending aorta compress the superior cava, so as to prevent the free return of blood from the head. The patient died in a sub-apoplectic state.

Aneurisms produce the most singular effects upon the bones,—they seem to destroy them as if by attrition; thus the false consecutive aneurisms of the aorta destroy the bodies of the dorsal vertebræ, leaving the intervertebral cartilages intact, and forming incomplete partitions traversing the back part of the aneurismal sac. It is needless to state, that the posterior portion of the sac has in this case been previously destroyed. True aneurisms have also occasionally produced the same effects upon the bones.

Aneurisms of the abdominal aorta rarely destroy the bodies of the lumbar vertebræ, probably because of the greater freedom with which the sac can develop anteriorly.

True or false consecutive aneurisms often also corrode the sternum, perforate it, and form tumors, projecting beyond the surface of the chest. These tumors sometimes acquire a volume equal to that of the head of a full-grown fœtus, as you observe in these casts and preparations [shewing them.]

Aneurisms of the arch of the aorta, or the innominata, sometimes project above the sternum, or force their way under the cartilages of the ribs on the right side. The bones in these cases are destroyed, although their cartilages are scarcely at all affected. [Preparations.]

It is singular that it is not the largest aneurisms which thus destroy the sternum and form external tumors. Sometimes those of the size of an egg will produce this effect, and very large ones remain hidden in the cavity of the chest, although the anterior face of their sacs be closely

compressed against the posterior surface of the sternum.

General signs of aneurism of the aorta.—Perhaps there is no certain sign of thoracic aneurism except the pulsating tumor which it occasionally forms when it penetrates through the parietes of the chest. The signs of this disease are generally derivable from the effects it produces upon other organs by compressing them. Sometimes the very first evidence we have of the disease is a fatal hæmorrhage from its rupture. The general signs I am about to detail may be considered as equivocal.

There is not infrequently a difference in the state of the pulse in the radial arteries; this takes place when the aneurism compresses the left subclavian artery or the innominata, or when coagula fill the opening of either vessel, or when the tumor, by its pressure, changes the angle at which these vessels arise, and renders it more acute. When an aneurism compresses the trachea, a peculiar sibilating sound is heard, and the larynx and trachea are felt by the patient to be drawn downwards; there is also a sense of oppression and dyspnœa, which, however, diminishes when the tumor projects outwardly. Occasionally, also, when an aneurism of the descending thoracic aorta is destroying the bodies of the dorsal vertebræ, a sensation of terebration is produced in the back, as if a gimlet were perforating the bones.

All these symptoms form, however, but doubtful signs; for inequality of the force of the two radial arteries is frequent in many healthy persons; and the difference of the rhythm in these vessels might depend upon obstructions caused by clots of blood in the origin of the subclavians, as well as from an aneurism. The signs from compression may be derived from a variety of other causes; even the terebrating pains may be mistaken for rheumatic or neuralgic sensations. Laennec has seen the pulsating tumor itself confounded with an elongated cerebriform swelling, which, after destroying the first bone of the sternum, projected through it.

Local signs.—The most certain stethoscopic sign we possess of this disease is that of the strong pulsation of the aneurism, a pulsation which is isochronous with that of the ventricular contraction, but stronger than it. This impulsion is frequently coincident with the *bruit de soufflet*, and the *frémissement cataire*. The sound on percussion is dull also over that part of the chest which corresponds to the situation of the aneurism.

Laennec lays much stress upon the aneurismatic pulsation being simple; by which he means that it is not accompanied by the second sound, as in the beatings of the heart; but it has occurred to me frequently to meet with the second sound in aneurisms of the ascending aorta and its arch, although not so loudly as at the heart itself. No doubt this arises from the noise caused by the ventricular dilatation being communicated through the sac, which is often placed, and reposes, upon the heart itself. I have never heard the second sound in aneurisms of the abdominal aorta.

Laennec has stated, that when the ascending aorta, or its arch, are dilated, a pulsation is felt isochronous with the beatings of the pulse, and stronger than that of the heart, beneath the sternum, or below the right clavicle. Dr. Hope observes, that then there is a constant pulsation above both clavicles, at their sternal extremities, which is stronger on the right side if the ascending aorta be the seat of dilatation; and that this impulse is never communicated to the sternum except the aneurism be very large. He states also, that there is a hoarse and short bellows-sound above the clavicles, if the dilatation be confined to the ascending aorta, and that it is also hissing and superficial upon the sternum; and that, finally, the harshness of the "bruit" is always proportionate to the roughness of the osseous inequalities formed upon the inner surface of the aorta.

Dr. Hope describes the signs of a false consecutive aneurism of the ascending aorta and its arch to consist in a pulsation both above and below the clavicles, but that it is the least impulsive in the latter situation. If the ascending aorta be the seat of the disease, these pulsations are most distinct on the right side of the sternum; if the arch, or the beginning of the descending aorta, they are felt to the left side of that bone, and even on the shoulders and back. The sounds are not so loud as when the vessel is dilated. In large aneurisms the noise produced by the pulsations is dull and remote, and sometimes louder on the side of the neck opposed to the tumor than on that on which the tumor is situated. It is often loudest on the back; and when the disease affects the descending thoracic aorta, it is generally more evident posteriorly than anteriorly. If a strong rasping sound be heard also on the back, the disease may be considered as almost certainly present. The "frémissement cataire" is occasionally felt above the clavicles, but never below, except the ribs are perforated by the tumor. When the aneurism is large this sign often disappears. Dr. Hope has, with great discrimination, described the circumstances which render these signs fallacious, and the means by which these fallacies may be detected.

Thus, tumors in the anterior medias-

tinum may give the aneurismal impulse, but not the sound. Hydro-pericarditis may also occasion impulsion, but the shocks vary in force, and are not exactly synchronous with the beatings of the heart. The heaving movements of an aneurism are always felt in the same place; that from fluid in the pericardium constantly varies. Hypertrophy and dilatation of the heart may be confounded with aneurism; but in the latter disease there are evidently two points from which the impulsions proceed—the one from the aneurism, the other from the heart; in the former affection there is but one—the heart itself. The heart, also, when in a state of hypertrophy and dilatation, produces a loud noise upon its contraction, but an aneurism a dull sound, like that of concentric hypertrophy. Enlarged glands situated above the clavicles may also cause impulsion, and simulate aneurism, but it is rarely accompanied by sound.

Aneurisms of the abdominal aorta are usually distinguishable by the stethoscope. The impulse is then often enormous, always simple, and isochronous with the contractions of the ventricles. The noise accompanying these beatings is clear, sonorous, and often combined with the "bruit de râpe." Tumors lying upon the aorta frequently receive an impulse from the pulsations of that vessel, but then it is always infinitely less than in aneurisms. The aorta sometimes beats violently under the influence of nervous causes; but in these cases the pulsations are never permanent; and upon pressing the aorta with the stethoscope, they are found not to extend beyond the natural diameter of that vessel.

Treatment of aneurisms.—Corvisart attributed the occasional formation of aneurisms to certain tumors attached to the arteries, of the following characters:—Speaking of one of them, he states, "That this tumor was formed of a fibrous cyst, whose parietes were about two lines thick; that it inclosed a substance of a less consistence than suet, and of a deep red colour, similar to clots of blood which had long formed, and adhere to aneurismal sacs. The external coats of the aorta were destroyed at the point corresponding to the cavity of the cyst; and the thickness of the parietes of the vessel was, in that part only, infinitely less than at any other point. Although he believed, from the colour of the matter contained in the cyst, that it communicated with the cavity of the aorta, yet he could perceive no orifice of communication; he saw only a slight gray or livid stain, corresponding to the base of the cyst." He had observed two or three tumors bearing these appearances.

From these facts Corvisart inferred, that if the patient had lived a sufficient time, these tumors would ultimately have so destroyed the coats of the artery, that the blood could have freely passed into the cavity of the cyst, which then would be transformed into an aneurismal sac, which would gradually become larger as the blood dilated its cavity.

Mr. Hodgson has, however, attributed the formation of these tumors to a very different cause. An aneurism of the extremities is occasionally spontaneously cured by coagula completely filling its sac, and obliterating also the canal of the artery communicating with it up to the collateral vessel nearest to the aneurism, after which these clots become converted into a fibrous tissue, which, with the vessel and the aneurismal sac containing them, gradually diminish in volume by the process of absorption. Mr. Hodgson believes, and his opinion is now generally received, that the tumors thus described by Corvisart are the remains of false consecutive aneurisms, spontaneously cured by a similar process.

Our indications of cure, then, should be to occasion the complete coagulation of the blood contained in the sac, so as to prevent any more of that fluid from passing into it. We should therefore diminish the quantity of the blood, and the force by which it is circulated. These effects can sometimes be produced by the method proposed by Albertini and Valsalva; a method I have described in speaking of the treatment of hypertrophy, and hypertrophy with dilatation of the heart, to which subjects I refer you. The acetate of lead has also been recommended. I have used it, but cannot say with much good effect. The coagulation of the blood in the aneurism may also be attempted by the application of ice upon the tumor. I think it often retards its increase; but it unfortunately happens, that, when the disease has arrived at the state to form an external swelling, little can be effected by any remedy.

If the morbid anatomy of this disease has been well understood, I need hardly state that the cure of aneurisms caused by simple dilatations of the arteries can never be effected, inasmuch as the current of the blood passing through them must tend to prevent the formation of coagula. It is true that they occasionally, although very rarely, do form; but it is scarcely possible that they can remain in such a state of repose as is necessary for their organization and permanent attachment to the parietes of the aorta, by which the natural caliber of that vessel can be restored. It is only in false aneurisms, where the sac is placed external to the artery, that such a cure can be hoped; for then the blood in the

sac is thrown out of the general circulation; it has time, therefore, to coagulate and become organized; and the whole may ultimately be considerably, if not completely, absorbed, without affecting the flow of blood through the artery itself.

DISEASES OF THE PULMONARY ARTERY AND VEINS, AND OF THE CORONARY VESSELS.

Pulmonary artery.—Diseases of this vessel are of rare occurrence; they consist of malconformations, of which I shall hereafter speak—of osseous incrustations, and of dilatation of the parietes of the vessel.

Ossific deposits are very seldom found in the parietes of the pulmonary artery; but dilatations of this vessel are not uncommon in persons subject to chronic diseases of the lungs. The artery has been seen at its origin of the breadth of three fingers. Ambrose Paré describes a case in which it was dilated to the size of the fist. The vessel in the latter case was also incrusted with ossific matter. No well recorded instance of false consecutive aneurism of the pulmonary artery is known.

Dr. Hope describes the signs of a case of dilatation of the pulmonary artery, which occurred to him, to have been as follow:—Pulsation, with fremissement cataire, between the cartilages of the second and third ribs on the left side, decreasing downwards, and not appreciable above the clavicles. This was accompanied by a loud, superficial, harsh, and sawing sound, which was heard above the clavicles, and upon the precordial region; the sound was loudest upon a prominence found between the second and third ribs. This state of the artery was combined with hypertrophy and dilatation of the heart.

Pulmonary veins. — Chaussier describes the case of a young woman in whom the left auricle was largely dilated, in consequence of obstruction of the mitral valve. The pulmonary veins were greatly enlarged; and one of those from the left lung was ruptured to three-quarters of an inch of its extent, at its emergence from the lung.

Affections of the coronary vessels.—The coronary arteries occasionally are observed ossified, and sometimes so completely, as to obliterate them at several points.

In hypertrophy and dilatation of the heart, these vessels are often dilated in the whole of their extent.

The coronary veins occasionally dilate; their distention is not unequal, like that of varicose veins of the limbs, so as to form a knotted appearance, but their bendings are considerably increased, so that their length is really augmented, as well as their diameters. The veins are commonly found in this state when the heart is hypertrophied and dilated.

OBSERVATIONS ON RENAL DROPSY;

Illustrated by Cases, and a Dissection.

To the Editor of the Medical Gazette.

SIR,

I BEG leave to transmit, for your perusal, a paper on the subject of "Renal Dropsy, illustrated by Cases and a Dissection," which I had the honour of reading before the Senior Physical Society, Guy's Hospital, on Saturday, February 7th. A request at the close of the meeting, that I would make it public through the medium of some widely circulated journal, and several subsequent similar requests from private friends, have induced me to forward it to you. Should you, therefore, sir, consider the subject matter sufficiently interesting and important, as attempting to illustrate a formidable form of disease only lately established, and still doubted by many, I have to request the insertion of it in some early numbers of your valuable journal, in such portions as may be most convenient. As the paper was not originally intended for publication, I have taken the opportunity of inserting in it some new matter, and of correcting and revising what had been previously written. I have also thought it right to subjoin an account of fifty of the patients whose urine was examined, as partly corroborative of any assertions that may have been brought forward. References to the works of the different authors quoted, are also inserted.

I remain, sir,
Your obedient servant,
JOHN ANDERSON,
Late Clinical Clerk, Guy's.

George-Street, Richmond,
March 14, 1835.

The subject of dropsy is one of considerable interest and importance. It is the consequence of disturbed balance between exhalation and absorption, and arises from so many and various causes, and is accompanied by, or dependent on, such extensive functional and organic derangement, as to render its presence an object of great anxiety to the physician, and its pathology, origin, and treatment, matter of considerable importance to which to direct his attention. In its different forms of acute and chro-

nic, idiopathic and secondary, it is of frequent occurrence, and is generally attended with danger; though this will, of course, vary with the extent, situation, and perhaps more particularly the cause of the effusion and its combination with organic disease. The acute and idiopathic forms are the most under our control, though, in the former, connecting circumstances will materially influence our judgment. Thus, then, the prognosis is for the most part unfavourable, and more especially as there exists, in many persons, a true hydropic diathesis, and this occurring generally in those whose constitution is weakened by disease, or debilitated and broken down by intemperate habits.

It is scarcely necessary to observe, that dropsy takes place in two very opposite states of the circulatory system and constitution generally, and in each state depends on various causes. We find it occurring as the result of debility simply, or of mechanical pressure, or of some thoracic or abdominal disease; and accompanied by relaxation of the whole system, and a want of power in the exhalant vessels. Very frequently, however, it occurs in a totally opposite state, and, instead of debility and relaxation, we have increased vascular action going on, and an active inflammatory condition of the system, attended, though not necessarily, by fever: this form has been called acute inflammatory or arterial dropsy. Thus, then, we arrive at two grand divisions of dropsy, according to the sthenic or asthenic state of the system in which it occurs: this will be found nearly analogous to Dr. Blackall's two divisions of dropsies according as the urine is or is not coagulable. The state of the urine in dropsy generally should always be regarded; in the latter form, though depositing nothing by heat, it presents certain appearances to which it is important and necessary to attend. In some cases it will be found clear, of a light colour, and copious in quantity; in others, diminished in quantity, but healthy in appearance; in others again (especially, I have observed, where there has been more or less disease of the heart), it is natural in quantity, but grows turbid on cooling, and deposits a copious light-coloured sediment, which is dissolved by heat. Lastly, the urine will be found scanty, and depositing a copious sediment more or less lateritious: this I have generally observed when diseased liver has been the cause of the effusion.

The acute or inflammatory dropsy is frequently attended by the presence of albumen in the urine; a circumstance first noticed, and commented on nearly twenty years ago, by Dr. Blackall, and still more recently by our talented physician, Dr. Bright, who has made this a subject of deep investigation, and whose labours and conclusions have rendered it an object of the greatest interest and importance to the inquiring physician. This latter gentleman has collected together an immense number of cases, and has detailed their history, symptoms, and morbid appearances, with extreme minuteness, and to him belongs the merit of having first pointed out organic structural changes in the kidney, as referable to the existence of anasarca; and then again connecting this with the presence of albumen in the urine. No argument or theory is adduced but what is substantiated by what must be considered as facts in medicine—viz. reports of cases*; and no plan of treatment is followed, or proposed, but what pathology would justly indicate; and before these theories can be overturned, or these connexions and relations disproved, an equal mass of evidence must be brought into the scale, and pathology must be as intimately connected with an opposite train of reasoning, as in the cases just alluded to. I am quite certain, that if this subject were not treated so superficially by many, its importance would be more evident; and from experiments, I am sure that the continued appearance of albumen in the urine, unconnected with dropsical effusion, is by no means so constant an occurrence as is usually supposed, but that connected with anasarca it very frequently takes place, and that when present it should always be an object of great anxiety, as indicative of extreme mischief and danger. It is this form of dropsy (to which Dr. Bright has suggested the name of renal) that I have ventured to select for the present discussion, illustrating it as far as possible by cases that have recently occurred in this hospital, and more particularly by one that proved fatal, and which we had an opportunity of investigating after death.

* Vide Reports of Medical Cases, by Dr. Bright, vol. i.; also a critique on the third volume, in the Med. Gazette for May 19, 1832, p. 229, col. 1.

Dropsical effusion, connected with albuminous urine, is induced by several causes, which predispose the kidney to suffer.

1st. Scarlatina.—In this case, the skin, from the previous eruption, is rendered very susceptible of cold, and its secreting function very much impaired; the kidneys sympathize, become functionally deranged, and serous effusion is the consequence. The urine will, in most cases, be found to be coagulable. Dr. Blackall relates about ten cases, illustrative of this, in five of which there was a bloody sediment in the urine. Dr. Hughes has found the urine albuminous in about twelve cases. Dr. Addison has frequently found it so, and further observes, that whenever this is the case, we may prognosticate anasarca *. This anasarca is truly of an inflammatory nature, generally coming on suddenly, and when early and properly treated does well. Antiphlogistic remedies are to be employed, and great reliance (according to Dr. Blackall) is to be placed on digitalis, the efficacy of which is fully shewn in the treatment of the above-mentioned cases; these are related at full length in his valuable treatise †. Dr. Wells also has given much valuable information on the nature and cure of this form of dropsical effusion ‡. Dr. Bright also observes, that "it is almost always accompanied by an obvious derangement of the kidneys, that the urine is frequently coagulable, and that there is more or less tendency to hæmaturia §."

2dly. Abuse of mercury.—As to whether mercury has the power of producing a coagulum in the urine, and the propriety of its employment in renal cases,—on this I will observe hereafter, and shall merely now state that the anasarca arising from this cause is of a true inflammatory nature, and may come on either suddenly or gradually; the former being the most favourable. Antiphlogistic remedies are here requisite, and an immediate discontinuance of the mercury, supposing the patient to be undergoing a course of it. In furtherance of this I may notice the case of a man now in Lazarus Ward, who had always enjoyed good health until attacked with syphilis some months ago, and took a considerable quantity of mercury: before this time he never observed any swelling, but, shortly afterwards, his legs became anasarcous, and his urine very decidedly coagulable. Dr. Blackall also relates nine cases illustrative of this form of inflammatory anasarca, treated principally by antiphlogistic means.

3dly. Several other remote causes are given by Dr. Blackall, as gout, the improper exhibition of bark and steel, topical injuries and inflammations (a rare cause), unsoundness of the digestive organs, which impairs the nourishment of the body and vitiates the blood; drinking too freely of cold liquors when heated (two cases illustrative of which are recorded by Dr. Blackall, which recovered under the use of bleeding and antiphlogistic remedies). The last causes to which I shall advert are those of most frequent occurrence; they were those, I may mention, that prevailed in the case to which I wish more particularly to call the attention of the Society;—I mean the exposure to cold and wet, and the free use of spirituous liquors, which some physicians have considered as capable of exciting a true dropsy; and certain it is that most of the renal cases which have occurred at this hospital lately are referable to these two causes, either separately or in combination: out of seventeen cases, sixteen were evidently thus produced. The sedative effects of cold and consequent deranged function of the skin, and the debility of constitution and irritation, induced by spirit-drinking, through the medium of the stomach, are well known. These causes predispose the kidney to suffer: this irritable organ sympathizing with the skin, a change in the renal secretion takes place, and, owing to checked perspiration, a vicarious discharge in the kidneys is produced: they become functionally deranged, and albumen appears in the urine; deranged function leads to disorganization; serum is effused first in the cellular membrane of the face, feet, and ankles; then gradually extending upwards to the thighs and abdomen; and the aching pain in the loins, the severe throbbing and lancinating pain in the head, and apoplectic tendency; the hard pulse, dry unperspirable skin, and albuminous, dingy,

* Dr. Addison's Lectures on Practice of Physic.

† Vide Dr. Blackall's work on the Nature and Cure of Dropsies.

‡ Vide a paper by Dr. Wells, in the third volume of the Medical and Chirurgical Transactions.

§ Vide Gulstonian Lectures, 1833, delivered by Dr. Bright; published in Med. Gazette, June 22, 1833.

and sometimes bloody urine, fully characterize and establish a true and exquisite case of renal anasarca.

I shall now proceed to detail the case just alluded to; it will be found to bear upon the description and symptoms just enumerated, and its sudden and fatal termination will shew how formidable a disease we have to combat with, and how, as yet, ineffectual are our remedies.

Frederick Crown, ætatis 47, a stout well-formed man, of leucophlegmatic appearance, was admitted into Luke's ward, December 3, 1834, under the care of Dr. Bright. He stated that he had been ill six months, and had been subject for several years to rheumatism, to an attack of which he dated the present illness. For the last four months he had suffered from anasarca, which first appearing in the face and ankles, gradually extended itself over various parts of the body. He was a man of very dissolute and intemperate habits, drinking freely of spirits, and exposing himself to many and varied changes of temperature. At the time of his admission the most prominent symptoms and appearances were as follows:—Countenance pale and sallow; eyes of a dull pearly lustre, and eye-lids bloated and œdematous; lower extremities anasarcous, and pitting on pressure; thighs œdematous, and hard on the inner side; cellular membrane of the scrotum and abdomen infiltrated and distended with serum; percussion gives no sense of fluctuation. Lancinating pain in the head, increased at night; oppression at the epigastrium, and pain in the region of the kidney, palpitation and dyspnœa following the least exertion. The action of the heart is labouring, and somewhat indistinct; rhythm tolerably healthy, and its beat diffused; pulse 104, with considerable jerk, regular; tongue dry, and skin unperspirable; bowels freely open; urine of a pale straw colour, acid, coagulable by heat and nitric acid, specific gravity 1·015; gouty and rheumatic pains (principally in the hands and wrists) very much complained of.

℞ Vin. Ant. ℥xx. ex Jul. Ammoniæ Acetatis, ℥j. sextâ quâque horâ.

℞ Pil. Scillæ c. Hyd. gr. x. omni nocte.

December 4th.—Pains very much increased; pulse 100, with some jerk.

Mittatur sanguis e brachio ad ℥xij. Applicetur Cataplasma lini lumbis bis in die. Omittantur Pilulæ. Pergat Mistura.

5th.—Blood drawn slightly buffed; pain in the loins relieved; that in the head increased; bowels rather confined.

C. C. nuchæ ad ℥x. ℞ Ol. Ricini, ℥vj. statim.

6th.—Going on more favourably; symptomatic pains better; gout and rheumatism troublesome; urine rendered only opalescent by heat; very coagulable, however, by nitric acid.

Pergat.

11th.—Pains in head and loins much increased: dyspnœa very severe; skin dry; pulse quick and hard, with some jerk; urine about natural in quantity, acid, and very coagulable before boiling. Mr. Stocker saw him, and ordered the following:—

℞ Pil. Camb. Comp. c. Cal. aa. gr. iij. statim. C. C. lateri dextro ad ℥xii.

12th.—Pains rather relieved; skin dry; pulse incompressible; rheumatic pains more severe. Dr. Bright ordered the following:—

℞ Tr. Camp. Comp. ℥ss. c. Vin. Colchici, ℥xx. et Liq. Ammon. Acet. ℥ss. ex Mist. Camph. ℥j. ter die.

℞ Hyd. Submur. gr. j. sextâ quâque horâ. Admov. Emp. Cantharidis sterno.

15th.—Pain in loins increased; dyspnœa great; tongue dry; skin hot; pulse strong; urine very coagulable, but rather diminished in quantity; bowels rather confined; feels nauseated from the medicine.

℞ Mist. Magn. c. Mag. Sulph. ℥iss. pro re nata sum.

℞ Sp. Æth. Nit. ℥ss. c. Liq. Ammon. Acet. ℥ss. ex Mist. Camph. ℥j. ter die.

To this latter Mr. Stocker added on the following day—

Acet. Scillæ et Tr. Hyoscyami, aa. ℥ss.

22d.—Has been a little improving up to the present time; but to-day the symptoms have recurred with their usual violence; great soreness of the loins complained of, and pain extending down the groin to the scrotum, with slight retraction of the testicle; also, a soreness and dryness in the throat, affecting deglutition, and causing a cough: these feelings probably owing to œdema of the glottis. Right hand puffy and œdematous; great thirst and heat of skin;

tongue dry; pulse quick and incompressible; bowels regular; urine of the same appearance, acid, and coagulable.

Pergat.

27th.—Œdema of upper extremities, and particularly of the right hand, very much increased; pain in the throat, and difficulty of deglution, very severe.

Admov. Emp. Cantharidis gutturi.
℞ Pil. Scillæ Comp. gr. v. ter die.
℞ Liq. Ammon. Acet. ℥ss. ex Mist. Camph. ℥j. ter die.

30th.—Cough very troublesome; expectorates some viscid mucus stained with blood; throat very sore; œdema of right hand increased; urine in good quantity, and very coagulable.

Pergat.

Jan. 5th, 1835.—Pain in the head has continued very severe; breathing rather easier; skin dry; tongue coated; pulse quick; slight difficulty in passing his urine, which is of the same character and appearance.

℞ Mag. Sulph. ℥ss. c. Vin. Ipecac. ♏v. ex Inf. Gent. Co. et Inf. Rosæ Co. aa. ℥vj. sextâ quâque horâ. Omittantur alia medicamenta.

He continued during the next week rather to improve, though the throat was very sore, and the urine very coagulable. A few days afterwards (the day preceding his death) he was observed by Dr. Bright to be better in his general health; but towards evening his manner of speaking seemed rather singular and unusual; his breathing became more oppressed during the night, and he would not answer when spoken to. These symptoms and appearances continued to increase during the next morning, when, about half-past 11 A.M., he suddenly went off into a kind of apoplectic fit; his breathing became stertorous, eyes protruded, and pupils contracted; he foamed at the mouth, had convulsive startings, and the face was of a yellowish tinge.

He was ordered to be cupped behind the ears, a blister to be applied to the shaved scalp, and one grain of calomel to be taken every four hours.

He rallied, but had four more attacks of the same character, and a last one at 3 o'clock, when I was with him. The pupils were then dilated; the breathing was stertorous, and at long intervals; the face and hands were bedewed with a cold, clammy perspiration; and in a quarter of an hour he died.

An inspection took place twenty-two hours after death. For the following minute and interesting account of the post-mortem appearances I am indebted to Mr. Sibson:—

There was a general state of anasarca present all over the body, penis, scrotum, upper and lower extremities. On cutting into the cavity of the abdomen, which was exceedingly tumid and tense, upwards of a gallon of clear slightly yellow fluid escaped. Liver appeared to be remarkably healthy; gall-bladder nearly filled with dark greenish bile. Spleen small; numerous white opaque spots on its surface; substance healthy; Pancreas rather small; healthy. The small intestines were rather blanched on their surface; their appearance gave rise to the idea of their being invested with a false membrane, from which, however, they were quite free. The stomach: towards the cardiac extremity, and along the greater and lesser curvature, the mucous membrane was soft, and easily separated from the middle coat. The mucous membrane of the pyloric extremity, for two or three inches from the orifice, was hard and granular; the pylorus itself was nearly half an inch in thickness, dense and white in its structure. The duodenum, for two or three inches at its commencement, had its mucous membrane hard and minutely granular. The rest of the small and the large intestines appeared perfectly natural. The left kidney was of little more than half the usual size, slightly lobulated on the surface, and of a much firmer texture than natural. The investing cellular membrane adhered pretty firmly to the proper tunic, below which were seen eight or nine cysts about the size of a pea, but varying a little in magnitude, and filled with clear fluid. One cyst of the same size was opaque. The proper tunic was readily separated from the surface of the kidney, which was covered with minute white granulations, of the size of small pins' heads; they were clearly contrasted with the light brown colour of the cortical texture. There were one or two white spots, about half the size of a silver penny, near the entrance of the vessels. On cutting into the kidney, its substance was found to be hard, and similarly granulated to the surface in its cortical part. One or two white spots

were seen on the tubular substance; and the cortical part was exceedingly narrow, the tubular structure appearing to be of rather more than its natural dimension. The infundibula and pelvis presented nothing remarkable. The vessels of the right kidney were injected; the veins with blue, the arteries with red size. The veins presented numerous stellæ on the surface. The arterial injection shewed itself in numerous small packets in the cortical substance; but the whole of the tubular, and greater portion of the cortical, part remained uninjected. The right kidney was similar in every respect to the left. The bladder was filled with urine.—Thorax: the cavity of the pericardium contained about half a pint of pretty clear, straw-coloured serum. The pericardium itself presented nothing remarkable. Heart: the cavity of the left ventricle was about four times its usual size; it was firmly contracted, and presented very great hypertrophy, the walls being about three-fourths of an inch in thickness. The mitral valve and semilunar valves of the aorta were quite healthy. The calibre of the aorta was nearly double its usual size. The right ventricle was considerably dilated, and its walls were thinner than natural. The right lung was free of pleuritic adhesions; it was crepitant throughout, and natural. The left lung was considerably congested and œdematous, especially at the posterior part; it was crepitant throughout. The pleura pulmonalis, on the left side, was universally adherent to the pleura costalis. The cavity of the pleuræ contained about a pint of straw-coloured fluid.—Head: There was very considerable subarachnoid effusion on the surface of both hemispheres. The base of the brain and the arachnoid presented small and slight opacities in numerous points. The pia mater was readily separated from the convolutions; and from their surface a thin pellicle of cineritious matter could be easily peeled off. The lateral ventricles were distended with about two ounces and a half of clear fluid. The carotids were at points opaque, and semi-cartilaginous.

On cutting into the knee-joints they were each found to contain about an ounce and a half of semi-opaque synovia, mixed with loose flakes of a white matter, having a gritty feel. The articular surfaces of the cartilages of the femur, tibia, and patella, in both joints, were covered with a white gritty substance, and the synovial membrane had imbedded in it, at various points, masses of a calcareous concretion, the largest of which was about an inch in length, and half an inch in thickness. The cartilages were of nearly double their usual thickness, and much less firm in their texture than natural, and of a brownish colour. The elbow-joints had a similar secretion; but the surface of the shoulder-joints was quite smooth, as also the phalangeal articulation of the right great toe*.

A portion of the effused fluid from the different cavities was analysed by Dr. Barlow, who has been kind enough to favour me with an account of the process:—

"An aqueous extract was obtained from each of the fluids, and from this extract an alcoholic one was procured, absolute alcohol being used for the latter purpose: all the evaporations were conducted at a temperature not exceeding 200° F. Of each extract a syrup was made by the addition of a few drops of distilled water; and to each of these syrups were added a few drops of strong nitric acid. The syrup from the effused fluid of the brain, as also that of the abdomen, yielded within two hours a considerable crop of foliaceous pearly crystals, of an arborescent form. That from the pericardium, as also that from the pleuræ, yielded a very small crop of crystals, after a much longer time."

Dr. Barlow has strong reasons for believing that these crystals were nitrate of urea.

The case just related, then, presents many particulars of practical interest and importance.

1st, The remote cause of his complaint—his intemperate habits, and consequent exposure to changes of temperature; perhaps, also, his predisposition to gout. The manner in which these debilitating agents operate has been fully explained previously.

2dly, The most prominent attendant symptoms. Of these, perhaps the pains in the head and loins were the most universal. The affection of the head, certainly, was not particularly well marked in this case during its course; but it is generally of a very distressing

* Preparations of the injected kidney and diseased joints are carefully put up, and preserved in the museum of the hospital.

character, and is described as either a lancinating, darting, throbbing pain, occurring more commonly in the fore part of the head, or a feeling of constriction and tightness, as if an iron hoop were bound round very firmly; it comes on generally towards evening, and relaxes towards morning, going on in this way for some time, and then being absent for days together; it is the symptom usually most complained of, and certainly the one most distressing to the feelings of the patient. There are two patients now in the clinical wards who have just this character of pain; and I have seen it in them almost unbearable. Its acuteness is owing most probably to the inflammatory tendency of the body generally, and of the serous membranes in particular; perhaps also owing to the circulation of unhealthy blood. The pain in the loins was a well-marked symptom in this case; it was seated evidently in the kidney, and fully indicated the mischief going on there; whilst the post-mortem account corroborated it. He had cough, dyspnœa, and slight bronchial affection (frequent though not necessary attendants), for which the morbid state of the lungs and their adhesions fully accounted. He had palpitation; and the left ventricle of the heart was much hypertrophied. This morbid occurrence is of much interest and importance, and one to which I shall more particularly advert in the pathological remarks.

With regard to the dropsical effusions, there were both ascites and anasarca. The existence of fluid in the cavity of the abdomen gave no sense of fluctuation during life, from the thickened œdematous state of the abdominal parietes. This form of effusion, in connexion with albuminous urine, is not of frequent occurrence. From the observations of Drs. Wells, Christison, Gregory, and Bright*, anasarca, local or general, appears to be much more intimately connected with this morbid state of kidney and urine. In this case, the tendency to anasarca was very great, it being almost general.

Sometimes this affection is only very slight, and there are cases now in the hospital where it is confined to the ankles only (and these scarcely pitting on pressure), or to the face, giving it a bloated, sallow, puffy appearance. This latter is a very characteristic sign, and will often detect the disease. With regard to the œdema of the face, this is sometimes very great, and particularly so early in the morning; the eyelids and cellular membrane, more especially in the direction and extent of the orbiculares palpebrarum, are puffed, sometimes so as to completely obstruct vision. Imperfectness of vision also occurs from another mechanical cause, viz. effusion of serum between some of membranes of the eye; but whether this is really the case, or whether the brain itself is in some way affected, is not, I believe, quite ascertained; perhaps both causes may operate,—though in favour of the latter I have observed, that when the tendency to head affection is greatest (independent of any œdema), and the paroxysms of pain before described are most violent, vision is decidedly most impaired; and also that the power of vision has improved simultaneously with the cessation of the paroxysms, though the œdema of the face and general anasarca may have remained the same; and this latter affection I have sometimes, though not always, seen less where the head affection was the greatest. Now, supposing these pains to depend partly on any inflammatory state of the membranes of the brain, may the greater effusion of serum in other and more distant parts modify, and to a certain extent lessen, this inflammatory action? And again, the cerebral paroxysms coming on worse at night, and the œdema of the face being greatest in the morning, may not this discharge of serum from the more superficial capillaries in some way relieve the congestion of the internal vessels?

Another prominent symptom in this case was the dry unperspirable skin, which is a frequent symptom in dropsy generally, perhaps more particularly so in the form now spoken of. It certainly must tend to keep up the irritation in the skin; and an attempt to restore the function of the skin must be considered an important point—its re-establishment a favourable sign. The pulse was generally quick and incompressible, indicating an inflammatory state of body, and fully justifying a strict antiphlogistic regimen. The gouty and rheumatic pains that were complained of were much more severe towards the termination of the case, and though always a

* See the Cyclopædia of Practical Medicine, article *Dropsy*, p. 641.

ground of complaint with him, were not an object of great attention, and could hardly be considered as having any thing to do with his dropsy, though now and then they do occur together, probably by the remote causes being so nearly allied. The urine was uniformly of a pale colour, and coagulable; and this leads me to make some remarks on the nature of albuminous urine in general. This kind of urine differs from all others in its property of coagulation to a greater or less extent by heat, by which we infer the presence of albumen, as no other proximate principle with which we are acquainted possesses this property. The coagulation varies in extent, probably in proportion to the severity of the disease; but this is by no means universally the case. Sometimes, on the application of a gentle heat, the urine becomes suddenly opalescent, and quickly curdles; at others, a thick scum forms at the top first, and remains there; and often a thick film passes suddenly through the heated liquid, and in a few seconds the whole becomes a tremulous milky mass. At an interval varying from a few seconds to two or three minutes, the whole of the albumen becomes precipitated, either in dense flakes or in curdled clots, and settles to the bottom of the tube. These phenomena sometimes do not take place until the urine arrives at the boiling point, and sometimes a little evaporation is necessary. When there is a less quantity of albumen present, the urine is rendered at first only opalescent by heat, and after a time brownish bran-like flocculi are precipitated; sometimes, however, not until the application of nitric acid, which immediately deposits them. Again, nitric acid will occasionally only increase the opalescence, and after some time a brownish coagulum becomes deposited. On what does this brown colour depend? Is it any re-action of nitric acid, or is it the colouring matter of the blood? for I have generally noticed a precipitate of this description to exist in urine more or less dingy, and not in that which is of a pale straw colour. It is always necessary to apply the test of nitric acid, as soon as the phosphates are precipitated by heat (according to Mr. Rees, from the decomposition of urea and generation of ammonia), and present the same appearance as albumen, and the application of the acid will re-dissolve them; whereas, if it were albumen, the opalescence and precipitate would rather be increased. Again, nitric acid will sometimes give a precipitate that will be re-dissolved by heat; this probably arising from the presence of the lithates. It is therefore obvious, that to prove correctly the existence of albumen, neither the test of heat or nitric acid individually can be sufficient; but when applied conjointly, and the precipitate given by the one is not re-dissolved by the other, the evidence of albumen is pretty certain and correct. There are other tests *, but unimportant as regards the present subject, as I think, should the two former powerful agents fail, even though albumen be obtained by a more delicate test, the existence of much renal disease can scarcely be inferred. As far as I am at present aware, a lithate or phosphatic deposit, though occasionally happening, is by no means frequent, and has no connexion with the albuminous state of the urine. The colour of albuminous urine, and quantity passed, will be found to vary, being sometimes quite pale and straw-coloured, with no sediment, copious in quantity, and of a ropy, very slightly unctuous appearance; at others presenting all varieties of shade, from a simple dingy to a dark reddish brown, or completely bloody appearance, each shade of colour being with or without more or less bloody deposit; the most frequent kind, probably, is the pale. These different forms of coagulation and varieties of colour I have had repeated opportunities of observing in the several cases that have occurred during the present clinical session. It would be highly important to know if these different appearances can be associated with different stages or forms of diseased action; if from them we can infer the state of disease actually present in the kidney, and consequently the danger to be apprehended; and lastly, if they can be considered any guide to our practice, as pointing out an indication of cure, and regulating the activity of our treatment. If such were the case, probably much good might be effected in the way of remedies; but from what has been written on this subject, and from my own experience, I should fear that such were not so. I have certainly seen equally

* Bi-chloride of mercury and the acetic acid, with the ferro-prussiate of potass, are delicate tests of the presence of albumen.

bad and similar cases accompanied by totally opposite states of urine, both as regards its pale or dingy colour, its quantity, and the curdled, flaky, or flocculent nature, of the albuminous precipitate.

Resuming the remarks on coagulable urine in general: the specific gravity is said to be low. Dr. Bostock observes, that of 28 cases examined, the highest was 1·032, the lowest 1·006, the average 1·017. I have not myself seen it remarkably low: of 12 different cases, the highest was 1·020, the lowest 1·011, the average 1·018. It is said, that the lower the specific gravity, the more albumen there is; but this is not necessarily the case. Albuminous urine is almost always acid: out of 18 cases, 16 were acid; the other two were neutral. And when, in the course of renal disease, urine that has hitherto coagulated, and one particular day has not this property, will on that day generally be found to be alkaline or neutral. I have observed this to happen in three cases. This alkaline property, then, may be considered, perhaps, as a cause of the urine not coagulating; but whether is it that the re-agency of the tests is prevented, or that there really is no albumen present? Supposing the former to be the case, would the albumen be appreciable by test if the alkali were neutralized*? If so, nitric acid in excess would probably be the best test that could be employed; it would both neutralize the alkali and precipitate the albumen. Dr. Wells has considered a deficiency of salts in the urine a cause of its non-coagulation. Dropsical urine generally, and albuminous urine in particular, I have found by experiment to be less prone to decomposition than otherwise diseased or healthy urine; it also contains but little urea, and this Dr. Bostock considers may be a cause for the tardiness of putridity.

Blood drawn from patients labouring under this disease generally presents a true inflammatory character; it appears to be in some way or other vitiated; and the experiments of many distinguished chemists pretty nearly prove that it contains urea†; and moreover, that this latter substance always exists in the blood previous to its elimination from thence by the kidneys and subsequent appearance in the urine*. From the serum of the blood drawn from a patient now in Lydia ward, Dr. Barlow obtained some crystals, which he has strong reasons for supposing to be nitrate of urea. I am aware it is a matter of great dispute as to whether it always exists; but as this subject has been repeatedly discussed in this theatre, and not yet settled, it would be as well if it were not resumed *this* evening, but rather allowed to give place to any remarks that may arise upon the pathology and the hitherto unsettled treatment of this formidable disease; not but that I allow the question is one of immense importance, and would, if settled, perhaps account for several singular phenomena that do now and then arise in the course of this complaint. It is impossible to doubt but that the circulation of unhealthy blood would greatly aggravate symptoms, and prove a source of much irritation to the system generally.

The presence of albumen in the urine is considered by some as of frequent occurrence, and very slight causes, it is supposed, will prove effectual in producing it; such as mere errors in diet, or excess of any kind. This may or may not be the case; and I am more inclined to believe that often the precipitate in such instances has not been fairly tested, and that it has not been albumen. With regard to the frequency of its occurrence, from the experiments of others, and from my own, I am inclined to think that albuminous urine, unconnected with dropsical effusion, but rarely occurs. These experiments I will relate more in detail. Dr. Barlow, Mr. Tweedie, and Mr. Rees, examined the urine of 296 patients, taken promiscuously, and found that 26 were coagulable by heat and nitric acid; of these 26, 11 had symptoms of anasarca, consequently 15 (very nearly 5 per cent.) had coagulable urine, and no dropsical effusion discoverable. My friend, Mr. Gorham (whose kind and zealous assistance I am happy to acknowledge), and myself tested the urine of 141 patients, taken promiscuously, by heat and nitric acid, and we found 18 to be positively albuminous†; of these, 17

* In one case where the alkaline state depended on the presence of ammonia, by continuing the heat for some time the albumen was precipitated in small flakes.

† Experiments of Drs. Christison, Gregory, Babington, &c.

* Experiments of Prévost and Dumas, Gmelin and Tiedemann.

† In all these cases, the precipitate given by one test was not re-dissolved by the other.

were labouring under different forms of dropsical effusion, one of whom was undergoing a mercurial course, the remaining one was in a state of confirmed phthisis, and the albuminous deposit were very trifling. Thus, then, out of 141 patients, one only had coagulable urine without every other concomitant symptom of renal disease *. I think these different experiments go far to prove that the presence of albumen in the urine, if not to be relied on as a test, can surely be considered as an indication and a guide to our practice.

Pathology.—On examination after death, in this disease, the kidney is very frequently found more in fault than any other organ †, and derangement, or disorganization, to a greater or less extent, is found to have taken place. Dr. Bright observes, "I have never yet examined the body of a patient dying with dropsy attended with coagulable urine, in whom some obvious derangement was not discovered in the kidneys ‡." Dr. Blackall gives an account of some dissections, in which the kidneys were found more or less in fault and altered in character. Dr. Darwall also notices certain morbid appearances and diseases in the kidney, attended by dropsical effusion §. When this disease has been but of short duration, the kidneys will be found congested or gorged with blood; but sometimes their colour and consistence are altered, being less firm than natural, and of a pale-yellow mottled appearance, both externally and internally; — again, they are found larger or softer than natural, and the texture of the cortical part becomes granulated with numerous white points, or specks of an opaque white matter, distributed throughout its substance, becoming more evident as the disease advances: this state of kidney with coagulable urine, may exist without any marked appearance of anasarca. Lastly, they are found rough and scabrous externally, of a lobulated contracted form, and of a semi-cartilaginous firmness: here generally the urine is highly coagulable. The state of kidney, in the case just read, appears to be referable to the two latter forms. Besides these, the kidneys may be preternaturally soft, or firmer, with concrete-like deposits obstructing the uriniferous tubes, and the vessels of the tubular part assuming a waved direction: in these forms, the urine is only slightly or occasionally coagulable. The liver is generally found pretty healthy; it was so in this case: occasionally, though rarely, it is found congested, or of a spotted mottled appearance. The left ventricle of the heart has been occasionally found dilated and hypertrophied; and in the case related, this morbid appearance was beautifully illustrated. This organic disease of the heart, in conjunction with his apoplectic seizure, and the peculiar features of his complaint, is a point of great importance, as serving to establish a connexion and relation between these different affections. That there is an occasional coincidence between cerebral apoplexy and an albuminous state of the urine, with its consequences, is known; but whether it is of such frequent occurrence as to become an established point of decided importance, is still open (as far as I am aware) to future investigation. The connexion, however, between apoplexy and organic disease of the heart, is, I think, established on a pretty firm basis, by the facts stated in Dr. Hope's admirable paper *; where he observes, that of 42 patients who died of apoplexy, 30 had disease of the heart, and of the muscular structure of this organ especially. Richerand, Bertin, and Andral, have demonstrated this coincidence. Dr. Bright also notices and observes upon its occasional occurrence †. I have myself seen two cases of apoplexy where coagulable urine and hypertrophy of the left ventricle of the heart existed; and still more recently, a case in private practice, where serous effusion in the brain had taken place: the urine was not albuminous, but the left ventricle of the heart was hypertrophied; its walls being exceedingly thickened, firm, and dense in their structure. These facts would seem to trace out some connexion and dependence between these three points, and go partly to prove that in the case related this evening, these three morbid occurrences (which

* Similar experiments were made by Dr. Wells, with similar results.

† According to Dr. Bright, in the majority of five to one.

‡ Medical Reports, vol. i. p. 2.

§ Cyclopædia of Practical Medicine, article *Dropsy*, p. 644: the state of urine not mentioned.

* On the Connexion of Apoplexy and Palsy with Organic Disease of the Heart; published in the Med. Gazette for February 28, 1835.

† Gulstonian Lectures.

were all well marked) did bear some relation to each other. In forming these conclusions, the circulation of an unhealthy blood, consequent upon the disorganization of the kidney and the derangement of its secretion, must be taken into consideration. Marks of old or recent inflammations of the serous membranes are often found, more particularly the pleuræ. The adhesions in the chest sufficiently proved the previous existence of inflammation in the case before alluded to. The immediate cause of death was the serous effusion in the brain, which the post-mortem statement has sufficiently illustrated.

With regard to the treatment,—this must be directed with a view to restore the healthy function of the kidney, and to guard against any inflammatory affection, or apoplectic seizure, that may and does arise. That it is often unsuccessful, is but too true. We must, however, remember that the coagulable state of the urine may exist long before the anasarca shews itself: the patient's attention is not arrested until this latter affection occurs; and when at length our remedies are administered, the kidney is far advanced in disease. Does it not, therefore, behove every practitioner to examine carefully, in every suspicious case, the state of the urinary secretion? General and local depletion, and a strict antiphlogistic regimen, are the principal indications of cure; for (as Dr. Bright observes) there is reason to believe that a state of great congestion, perhaps an actual process of slow inflammation, exists in various internal organs, and particularly in the kidneys, where it probably lays the foundation for their future disorganization. Hydragogue cathartics act well—as jalap, elaterium, &c.; but we must be cautious not to purge too much, for there is a fear of abrasion of the mucous membrane of the intestines; perhaps also a danger of exciting or increasing inflammatory action in the kidney. Digitalis may be employed, with caution. Supertartrate of potash, from its gently purgative and diuretic property, is of great service; but all stimulating irritating diuretics are to be avoided, and we must act gently on the skin by saline diaphoretics. The loins should be surrounded with a large linseed poultice, which acts as a fomentation to the part, and will be found a very soothing application. Milk diet is the best. Tonics are indicated by the debility occasionally present, and, in the more chronic forms, Dr. Bright is inclined to think they may be of benefit. Dr. Blackall also speaks of the use of tonic remedies. The occasional alkaline property of the urine in confirmed renal disease, in connexion with the absence of albumen, as before alluded to, would seem to indicate the employment of an alkaline remedy. Dr. Bright, with this view, tried the liq. potassæ in one case, but not with much apparent benefit. The uva ursi and bismuth also have been tried. In the case related, this plan of treatment, to a certain extent, was followed, but with how little success the result shews; indeed, when frequently occurring, or when long established, this disease appears incurable, and palliative, and not active, remedies must be employed; such a deep-rooted foundation does there appear laid for it in the broken down, debilitated habits, in which it occurs. Still we may hope that pathology and experience will yet point out a more efficient plan of treatment, enabling us to restore the healthy functions of the body, and to avert those formidable symptoms that now and then arise, and which, when present, baffle the art of the most skilful physician.

The propriety of giving mercury in these cases is very questionable; perhaps almost inadmissible. It appears probable, even almost certain, that mercury possesses the power of setting up that deranged action in the kidney, and, when already present, of increasing it; the result of which is albuminous urine, and the ptyalism produced is most distressing to the patient. Dr. Wells has known it to produce albumen in the urine *. Dr. Blackall gives it as a positive cause for anasarca, and considers its exhibition as equivocal and hazardous †. Dr. Darwall is of the same opinion ‡; and Dr. Bright observes, "the cases which have proved most successful in my own practice, have generally been those in which I have rigidly abstained from the use of mercury." As far as my own experience goes, I have undoubtedly seen the urine become more coagulable under its

* Cyclopædia of Practical Medicine, article *Dropsy*, page 641.

† See some excellent observations and arguments on this subject, in Dr. Blackall's work, before quoted.

‡ Cyclopædia of Practical Medicine, article *Anasarca*, p. 76.

employment (in one case distinctly so), and cases also have occurred where I have tried the urine almost daily before the use of mercury, and, when the mouth has become sore, albumen has appeared; which albumen has gradually disappeared again with the discontinuance of the mercury and the decline of its salivating effects. These phenomena are by no means universal, but they do now and then occur in a very marked degree. Cases may also occur that are so complicated with bronchial and other affections, and where the disease in the kidney may be considered as secondary only, that the use of a small quantity of mercury is advisable and beneficial; but upon the whole, when the renal symptoms occur in a marked degree, and the urine is decidedly coagulable, arguing from facts, the employment of mercury can scarcely be sanctioned.

[To be concluded in our next.]

OBSERVATIONS

ON THE

CURATIVE PROPERTIES OF HYDRIODATE OF POTASS

IN PERIOSTITIS AND CHRONIC ARTICULAR RHEUMATISM.

By John Clendinning, M.D.

Physician to the St. Marylebone Infirmary, and to the Western Dispensary, Westminster, &c.

[Concluded from p. 837.]

My friend Dr. Holroyd has furnished me with the subjoined particulars of a case, in which, at my suggestion, he employed the hydriodate. It was a case of chronic articular rheumatism, treated by Dr. H. as a patient of the Marylebone Dispensary.

Case IX.—J. D, ætat. 30, married, and never affected with venereal disease, admitted 25th September, 1834. He had been subject to rheumatism for fifteen years, and for the last eighteen months has been unable to work, or to walk without a stick. He had been in St. George's Hospital, and had there and elsewhere taken much medicine without advantage. The only part painful at his admission was the right knee, which for twelve months had caused him so much distress, that he had latterly used opium at night, to the extent of fifteen grains at a dose, merely for ease from pain. On the 30th, no better, when the hydriodate, in doses of four grains thrice daily, was substituted for his former medicines. In forty-eight hours improvement was perceptible; slept for several hours the second night of the iodic treatment without opium. In ten days the pain of the knee was entirely removed, and he slept the whole night; he then continued for a few days, and left off gradually.

Case X.—Rebecca Fuller, æt. 30, admitted in the St. Marylebone Infirmary, under my care, January 22d. She had been ill of chronic rheumatism for the last year, and when admitted, had painful swellings of the ankles, at the roots of the fingers, and in the palms of the hands; also a periostitis, extending over the olecranon and upon the body of the ulva of one arm. In the right arm, also, both external pressure and contraction of the muscles caused pain, which appeared to originate in the intermuscular fasciæ and tendinous attachments of the muscles. She was pale and flabby, with feeble pulse and cool skin. I ordered

> Ammoniated Tinct. of Guaiacum, ℥ss. in ℥iss. of the Mist. Cinchon. Aromat. of our hospital Pharmacopœia, thrice daily.

Next day she had an attack of inflammation in the right iliac region, which was relieved by leeches and fomentations.

On the 24th a warm bath was tried, with seemingly bad effect, as she complained of increased rheumatic pains next visit.

On the 25th, a purgative, and Dover's powders at night.

27th.—No better. Ordered

> 15 drops Vin. Colchici in ℥iss Mist. Cinchon. Aromat. (Phar. nos.) ter quotidie.

Feb. 3d.—No improvement.

> The mixture as last ordered, with the Hydriodate of Potass, gr. iij. instead of Vin. Colchici, quater quotidie.

5th.—Better; complains of purging.

> The Decoct. Sarsæ. Comp. to be combined with the Hydriodate, instead of the Cinchona mixture, and 5 drops of Laudanum to each dose.

14th.—The medicine has answered every purpose; the tenderness of the

olecranon, and swellings, and soreness of palms and ankles, have disappeared.

Omit the medicines.

19th.—Some slight return of pain, for which the iodic mixture was again employed; and she was quickly in a state to be removed to the convalescent ward. While using the hydriodate, her diet was full and generous—viz. roast meat, porter, &c.

Case XI.—Ellen Putnam, ætat. 52, admitted into the St. Marylebone Infirmary, under my care, December 31, 1834. During the month of January, various remedies were employed—viz. colchicum, antimony, bark, opium in various combinations, but with little advantage. The symptoms principally complained of were tender swellings of the ankles, knees, and shins; on the right tibia there was a considerable node; she had severe osteocopi, and thence sleepless nights. She had been rheumatic for two years past, particularly about the greater articulations of the upper and lower extremities.

Jan. 30th, I substituted for her former medicines the hydriodate of potass, in mist. cinchon. aromat. (Pharm. Nos.), 5 grains thrice daily; and I ordered $\frac{1}{2}$ grain of mur. morphia every night.

On the 31st I doubled the dose of morphia and continued the mixture; and this plan was persevered in until the 7th February, when the node was quite gone, as well as all the painfulness, and most of the bulk of the swellings of the joints. I then suspended the medicines, but too soon, for on the 14th there was some return of articular pain and swelling, and I was obliged to prescribe again. I then directed the pil. veratriæ (Pharm. Nos.), which I had found useful in several instances not unlike the present, to be taken thrice daily.

On the 19th there was some slight amendment, and the veratria was continued and persevered in until the 2d March, when she still complained of pain of the right knee and ankle, which were swelled and tender. I then ordered for her the hydriodate of potass in mucilage, 5 grains every six hours.

On the 6th the swelling and tenderness of the knee and ankle were considerably diminished; she walked about the ward with much greater ease also.

March 9th.—To-day the iodic mixture continued, with morph. muriat. She is still better, and will, I have no doubt, be very soon discharged convalescent.

March 12th.—Discharged to-day.

Case XII.—Sarah Wood, ætat. 50, admitted into the casual ward, under my care, February 20, 1835. Seven years since, had what she called rheumatic gout, which obliged her to enter the Westminster Hospital, where she remained three months; left it still unwell, and has not since been free from gouty or rheumatic affections of the lower extremities. Her principal present ailment is painful swelling of the knees, incapacitating her wholly for labour during the last three months. Her general health excellent.

Feb. 21st.—I ordered the hydriodate of potass, 3 grains four times daily, in mucilage.

24th. — Improving rapidly; walks much better already.—Perstet.

27th.—Says she walks much better than at any time for seven years past; swelling of knees still considerable, with some tenderness on pressure; swelling of ankles quite gone.

March 6th.—Has persevered in the iodic medication since last report without inconvenience of any kind, and with great improvement in the use of the lower limbs; she "steps out" better (to use her own phrase), than at any time since the commencement of her treatment; has observed great improvement in her feelings in and power over her limbs, especially within the last three days. She is in the convalescent ward, and will, I expect, be discharged in a few days.

Case XIII.—In October last I was visited in my bed-room, to which I happened to be confined, by a gentleman of 27 or 28. He was in perfect health, with the exception of a gouty swelling of the joint at the root of the great toe of the right foot, I think, which had incommoded him for more than half a year, and had proved obstinate and unyielding to every remedy he had employed. Having heard of Mr. M.'s case and the result, he applied to me. I had no previous experience of the effects of iodine in gout, but on mature deliberation considered myself warranted in trying the hydriodate in the case. I accordingly ordered him 20 drops of a solution (containing 1 drachm of the salt to the ounce of water) thrice a day, and warned him against taking the medi-

cine fasting. He revisited me a week after, and told me that he was then for the first time for six months able to wear his boot. In another week he called again, and announced that he was quite free from pain and swelling, and in perfect health.

I have at the present moment under observation, in the St. Maylebone Parochial Hospital, and at the Western Dispensary, three or four other cases of chronic articular rheumatism, which I am satisfied, from what I have already seen of them, will soon speak as unequivocally and strongly in favour of the iodic treatment as those above detailed.

Observations.—The employment of iodine as an antiphlogistic is of recent origin: so far as I know, Dr. Williams, of St. Thomas's, is the first that became acquainted with its curative power in certain forms of inflammation. I have not myself, in my limited reading, (Dr. Williams's paper excepted) met with any notice of iodine in this character. I do not consider as exceptions certain works on scrofula and syphilis, particularly the latter, of which I have at this moment one before me, by Dr. Richond, entitled, "De la non-existence du virus venerien," &c. Paris, 1826; a work with the use of which Dr. Williams has kindly favoured me. In none of the works I allude to, is what I would call the antiphlogistic property of iodine acknowledged or denied; to none of the authors does it seem to have been known. In Dr. Richond's work the remedy is spoken of, not as an antiphlogistic, but as a discutient; not under the head of periostitis, but as a means of effecting the dispersion of a phymotic swelling of the prepuce and of buboes, after their passage into the indolent state, often succeeding acute inflammation. Its use also was external, by friction, and not by the mouth. I have already mentioned that Dr. Williams seems to limit its utility to periostitis, but in extending its use to the chronic inflammations and irritations of the ligaments and tendons, which seem the essential elements in general of inveterate articular rheumatism, I have been guided by palpable analogies, anatomical and physiological. In one instance only I have tried it in chronic gout, and in that case (viz. Case XIII.) it seems to have produced effects as satisfactory as could reasonably be desired.

For the inflammations of the nutrient membranes, and possibly of the substance also of the hard parts, iodine, in the form of alkaline hydriodate, seems to possess many advantages over most remedies in common use, in the diseases in which such inflammations occur. One advantage is, that its use involves no restrictions of diet or regimen: so far as I have been able to judge, a full and even generous diet, and self-indulgent habits, offer no impediments to the action of the remedy. A liberal use of animal food, in particular, I think rather favours its action than impedes, where there is no pyrexia, owing to its enabling the stomach the better to bear the stimulating, and often at first irritating, qualities of the salt. 2. Its use occasions no susceptibility of cold, like warm-baths, or diaphoretics, or mercury. 3. It does not necessarily debilitate, like bleeding or other evacuations. 4. It harmonizes, chemically and medicinally, with almost every sort of substance it may be desirable to combine it with. It is compatible with bitters, astringents, opiates, antacids, aperients, and diffusible stimulants, as I myself experienced; and the experiments of Dr. Thomson and others prove its medicinal compatibility with chalybeates and mercurials. With regard, likewise, to the mode of using iodine, I may shortly notice the advantages of the internal use of the neutral salt. 1. It requires no handling, pressure, &c. of the tender part. 2. The whole dose is absorbed if but swallowed, and no labour or care is required to secure its due appropriation, in which it contrasts very advantageously with the endermic method. 3. It is infinitely more manageable in internal use than pure iodine; the internal use also is preferable to the external in most cases: first, it does not disturb the inflamed part; secondly, under the eye of proper attendants, its absorption is rapid and sure; thirdly, it is not troublesome, like friction.

The inconveniences are few and unimportant: the principal are heartburn, flatulence, nausea, and diarrhœa; and sometimes vomiting, colicky pains, and such like. But these symptoms are generally suffered only at the commencement of its use, and are easily prevented or subdued. By dilution—by taking it in a mucilaginous fluid, or in a bitter decoction, such as that of gentian—by taking it on a full stomach, or just after

meals, and at no other times—by beginning with a small dose of two or three grains, and increasing gradually —by the use of antacids and aromatics, when cardialgia is troublesome — by the prompt employment of chalk mixture and laudanum, to check intestinal pains and diarrhœa—I have generally been able, after the first few days, if not from the beginning, to use liberal doses of the salt, and quickly to bring the constitution and disease under the influence of iodine; and when other indications than those which iodine alone might be expected to fulfil have called for attention, I have found no difficulty in bringing it to co-operate with various remedies of different and even opposite characters, without its either offering or suffering impediment.

When first used, the hydriodate of potass sometimes causes pains and other inconveniences in the head, chest, and other parts remote from the stomach. Headache and vertigo are often amongst its first fruits; especially in nervous women, in whom it likewise excites the globus and other troublesome hysterical symptoms. In fact, from a consideration of the influence and sympathies alone of the stomach, we might *à priori* infer, that, as a powerful agent, it would be likely to give rise, in untried and susceptible subjects, to anomalous and unexpected symptoms. But such effects are of little importance, and easily mastered.

I have never observed any wasting of the mammæ or testes, or of any other part of the body, in the patients I have subjected most fully to its influence; but have repeatedly remarked their improved looks and general appearance. Those of my patients who took most, as the second case in this paper (that of a young woman who took about 100 grains a-day for weeks together), suffered as little change of condition as those others that took but ten or twelve grains in twenty-four hours.

In a few instances it has produced acute ptyalism. The sixth case I have detailed in this paper (that of Mr. M.), was a striking instance of its occasional salivating power: that gentleman had not used it many days when his gums got sore and teeth loose, and severe ptyalism supervened, and continued for ten days or a fortnight. I have at this present moment under treatment, in hospital, a female patient, to whom I have exhibited the iodic salt, for peritostitis of the occipital bone, and with considerable apparent advantage, but with effects on her gums, teeth, breath, &c. similar to those of mercury.

In this property, iodine seems to agree with digitalis and some other active substances, which, on rare occasions, have been known to produce like effects.

Its only sensible effects, which I should be disposed to call its regular effects, are increase of urine and of intestinal evacuations. The diuresis is not often enduring. After some days, or a week or two, the patients are not sensible of any thing unusual with respect to the quantity of evacuation. In the quality I have not myself observed any other change than a great increase, in several instances, in the proportion of lateritious deposit. In the urine of patients that drink but little, there may be expected, according to my observations, an unusual quantity of uric acid. With respect to the presence or absence of iodine in the urine, I have made no experiments as yet, and therefore cannot myself speak; but I am informed that there is little difficulty in detecting it, especially by means of oxymuriate of mercury.

With respect to the bowels, I have rarely found it fail to prove aperient in one degree or other. I have at this moment, in the Marylebone Infirmary, a female long afflicted with articular chronic rheumatism, whose stomach and bowels at first proved so intolerant, as to lead me to abandon it for veratria, but who can now take five or six grains in chalk mixture, with five drops of laudanum, four times a day, without any inconvenient effect whatever. Her bowels are properly active, and yet she takes twenty drops of laudanum during the day, and gr. iss. of mur. morphiæ every night.

In the majority of cases, I have after the first few days found it to stimulate the bowels no farther than to cause free evacuation once, or more frequently twice, a day.

J. Clendinning.

Wimpole-Street, March 9, 1835.

PATHOLOGY OF PHLEGMASIA DOLENS:

WITH A CASE.

To the Editor of the Medical Gazette.

SIR,

THE perusal of Mr. Anderson's case of phlegmasia dolens, as reported in your last number, brings to my mind one which occurred to me in the year 1828, and which so completely corroborated the then novel opinions regarding the nature of the disease, that I felt no hesitation in admitting their truth.

After the remarks of Dr. Robert Lee, and others, and immediately upon the report of Mr. Anderson's interesting case, it might appear superfluous to add more upon the subject; but as there are some points of novelty in the one I treated, I will submit it to your choice to publish or withhold it.

The subject of the disease was a thin delicate woman, about 40 years of age, weakened by frequent child-bearing. She had been confined only a few days, for (I believe) the twelfth time, when I first saw her; and she was then complaining of pain in the major saphena vein. This vein, just above the knee, was swelled, hard, and tender, and the integument over it slightly inflamed. Leeches, &c. were applied, without benefit. The inflammation gradually spread upwards along the vein, and it became interesting to ascertain, whilst approaching the femoral, whether upon its invading that vessel, swelling of the limb (hitherto absent) would ensue. It did so; and with all the characters of phlegmasia dolens. The inflammation moved along the iliacs, and could be distinctly traced, by the progress and extension of the pain, to the uterus, when the lochia ceased. Not so the inflammation, which then traversed the uterine branches of the internal iliac of the left side, and took possession of the main trunk, passed by it to the common iliac; and then swelling, &c. of the left limb ensued. Another course of the disorder was into the abdomen, where, from purging, feelings of great depression, &c. it was evident that the balance of the circulation was much deranged, —that nature was busy in restoring the equilibrium and preventing the ill effects of unrelieved congestion*. The circulation of the lower part of the spinal column and cord seemed also to be impeded. The fever accompanying the affection (slight at the onset, aggravated when the lochia were suppressed), was throughout above the typhoid type. My patient recovered with much difficulty, and was for a long time extremely weak.

Most recent authors concur in attributing to the veins of the uterus the first agency in producing the phenomena of this disease; and it is not difficult to conceive that the great majority of cases will be found referable to their inflamed condition. The violence of the uterine contractions in labour, the pressure of the child, &c. must occasionally act as excitants of inflammation; and when the great extent of the venous development of that organ is considered, and that especially there is superadded an unhealthy state of the constitution, we cannot be surprised that phlebitis more frequently arises there than elsewhere. But in the above case we find the disease attacking the venous system in another quarter, open to the eye and touch, and subsequently involving the parts whence it most generally arises, yet productive of the same consequences. It may therefore, I think, be safely inferred, that this case affords additional proof of the justice of Dr. R. Lee's opinions regarding the nature of the disease; and, moreover, conducts to the conclusion, especially if we admit under the same head such instances as have occurred in the male, that although the disease in question is usually of uterine origin, it nevertheless is not invariably so.—I am, sir,

Your obedient servant,

WELLINGTON CLARK.

Sutton, Surrey, March 10, 1835.

P.S.—It may be as well to add that my patient was, under pregnancy, affected with œdema of the right leg.

* There was no peritoneal effusion.

MR. PHILLIPS'S METHOD OF TREATING ANEURISMAL TUMORS.

To the Editor of the Medical Gazette.

SIR,

I THINK it only proper to state the reasons why I am unable to give you more than a condensed summary of my memoir on a "new method of curing aneurismal tumors."

The committee appointed by the In-

stitute to examine the essays which were sent in to compete for the Monthyon prize (which, by the will of the Baron Monthyon, was directed to be "awarded to the person or persons who, in the opinion of the Academy of Sciences, shall have devised a means of perfecting medical or surgical science"), in declaring that I was entitled to the first place, had only completed a portion of their functions.

It has, I believe, always happened, that the committee have recommended that a portion of the 10,000 francs should be awarded to one or more persons whose memoirs are named as next in importance to that of the successful competitor.

In their report to the Academy, they say that "they have not yet determined the value of the prizes which shall be awarded to the successful memoir, nor to the other three who have been named, viz. M. Pinel, M. Serre, and M. Ricord."

The memoir being the property of the Academy, I do not think I ought to seek permission to publish it entire until the report is complete.—I am, sir,

Your obedient servant,

BENJAMIN PHILLIPS.

17, Wimpole-Street, March 16, 1835.

The essay commences by showing the necessity of inventing some operation for the cure of aneurismal tumors, by which the mortality attendant upon that of Hunter may be lessened, if not entirely avoided.

This necessity is based upon the following facts:—I have selected, indiscriminately, from the medical journals of the last ten years, 171 cases of aneurism affecting the larger arteries, which were submitted to the Hunterian operation; of these cases, 57, or exactly 1 in 3, were unsuccessful; and of these, with the exception of 2, all died, not of the disease, but in consequence of the operation.

In the cases which were ultimately successful, secondary hæmorrhage occurred 16 times.

I selected, quite as indiscriminately, from Lancisi, Scarpa, Pelletan, Boyer, and others, 29 cases in which the ligature was applied according to the ancient method, and of these only 7 were unsuccessful. So that if the only question involved were that of mortality, the evidence here offered would be in favour of the old operation.

Of the cases operated on after the method of Hunter, in 27 the ligature was applied to the iliacs 20 times successfully; in 39 it was applied to the carotids 26 times with success; 37 times to the subclavian and axillary arteries, of which only 18 succeded; 53 times to the femoral, of which 39 were successful; 15 times to the humeral, of which 11 succeeded.

In the cases which were treated after the old method, the ligature was applied to the femoral 22 times, of which 16 were successful; 7 to the humeral, of which 6 succeeded.

The wholesale result, then, of 171 cases of aneurism operated upon by the method of Hunter, within the last ten years, has given us a mortality, almost always consequent upon the operation, of 1 in 3.

If we look at an operation in appearance much more terrible, we shall find a much less mortality;—I mean lithotomy. I have resorted to an exactly similar mode of collecting 537 cases of persons who submitted to this operation, and I find, as the result, that 431 were cured, or more than four-fifths.

When we consider, too, that there are few successful cases which are not made public, whilst unsuccessful ones are often unrecorded, it does appear to me that I am borne out in the statement, that the Hunterian operation is not so successful as to justify us in resting satisfied with it.

The next question which is put is—what is the immediate cause of obliteration? the answer to which is, the existence of a certain quantity of inflammation in the parietes of the artery.

In the absence of the ligature, or of any other foreign body, if inflammation be developed in the parietes of an artery, the common, nay, almost invariable, consequence is a complete obliteration of the canal.

In support of this statement, among other observations, cases of *gangrena senilis* and *ergotism* are detailed.

Idiopathic inflammation of the internal tunic of arteries is very rare, and it is not easily excited even by the introduction into the tube of certain mechanical agents.

Inflammation of the external, or cellular tunic, may be excited at will by mechanical irritation; and when excited, produces almost invariably the following results: an exhalation of a fibrino-albuminous matter, and sometimes even of pus, between the arterial tunics, by which the calibre of the canal is consi-

derably lessened; a rosy colour of the internal tunic; a coagulation of the blood contained in the canal; and an exhalation, upon the internal surface, of an albumino-fibrinous matter, which is presented under different forms.

After having very fully established the correctness of the preceding data, it occurred to the author that if he could devise any means by which he could excite inflammation of the external tunic, that the exhalation, coagulation, and obstruction, must follow.

To confirm that position a series of experiments were made, by introducing needles into the arterial tunics; and it was clearly demonstrated that the common effect of introducing these bodies through the arterial tunics was to excite the phenomena which have been already described.

This mode of exciting the necessary inflammation was abandoned, from the absence of any certainty that the arterial tunics were punctured.

The next series of experiments were performed to shew that the mechanical effects produced by a needle, within the canal of the artery which it had perforated, were not necessary to the success of the experiment.

In these experiments an incision was made upon an artery, and a small pellet of lint placed in direct contact with it. No injury was inflicted upon the artery by the operation, and the lips of the incision were immediately brought together.

On the second or third day the same series of phenomena as those which have been already described were produced.

As the desire of the author was to avoid all cutting, and yet to acquire a certainty that the arterial tunics were implicated, he at last resorted to the mode which has lately been stamped with the approbation of the Institute of France.

In the greater number of the cases of aneurism, the external, or cellular tunic of the artery, is a principal element in the composition of the sac; and whether that tunic be distended or not, its nature is unchanged, and its susceptibility to inflammation is the same; and where the aneurism is diffused, no long time elapses before its further progress is arrested by a cellular tunic of a new formation.

The cases, which will be detailed when the report is completed, fully justify the foregoing statements.

The operation as now performed, is to pass directly through the sac one, two, or more needles, each armed with a double thread of silk, which is permitted to remain there for a certain number of hours.

In all the observations which have been made, it has happened that within sixty hours a sufficient quantity of inflammation has been developed to produce the effects which have been detailed. If in any case those effects be not produced within sixty hours, the threads may be drawn backwards and forwards, so as to excite any quantity of inflammation which may be desired.

Commonly within forty hours the effects will be occasioned: heat will be developed, and a blush will be manifested along the course of the artery, as well as a dull pain extending for a short distance. When these effects are evident, the threads should be removed; and if the heat and pain be considerable, a few leeches should be applied.

As soon as coagulation is produced, the tumor follows the same course as after the Hunterian operation.

STOMACH AND COLON IN THE CHEST.

[Communicated by Sir J. M'Grigor, Bart.]

In the Museum of the Medical Department of the Army at Chatham, No. 63, Class vi., displays the whole of the stomach, and the greater part of the transverse arch of the colon, situated in the left cavity of the chest; which malposition is supposed to be owing to a wound of the diaphragm by a musket-bullet, received in 1811.

This very interesting specimen was taken from the body of Sergeant Dennis Barry, 88th regiment, aged 44 years, who died on the 4th January, 1833, in consequence of gangrene of the left lower extremity, produced, as it was supposed, by metastasis of a severe rheumatic affection of the larger joints. (For details of case, *vide* third volume of Original Documents, No. 16.)

The only information which can be obtained, calculated to explain the cause of the remarkable malposition of parts seen in the preparation, is as follows:— On the day preceding the battle of Fuentes d'Onor (which occurred in

1811), Sergeant Barry and his company being out skirmishing, one of the enemy, posted on the top of a steep hill, fired as he (the sergeant) was in the act of descending the same, and wounded him in the chest. The ball entered close to the nipple of the left breast, and passed out at the back, between the 8th and 9th ribs, as was evident by the scars seen at the post-mortem examination. It is stated in the document that the anterior opening of the wound soon healed, but the posterior one did not do so for a considerable period. When the latter closed, he became affected by such severe cough, with expectoration, that his medical attendant deemed it proper to lay the same open again. Being kept so, the symptoms were relieved, and portions of his shirt and jacket discharged. After this his health improved so rapidly as to enable him soon to rejoin his corps.

It appears, however, that the wound of his back afterwards repeatedly opened and healed—generally at intervals of twelve or fourteen months; but for the last five or six years it ceased to do so. It is stated that his appetite was very small and delicate; flatulency, &c. also much complained of; and if at any time the stomach happened to be overloaded, vomiting occurred. Bowels generally regular. The chief bad effects which this person himself attributed to his wound were—that since receiving it he never had been able to wear his knapsack with ease; and that his breathing became much affected whenever he walked at a quick pace, or ascended a hill.

Remarks.—For the sake of those who may see the Catalogue of the Museum, but not this specimen, it will be necessary to describe the exact relations of the objects. The stomach and the greater part of the transverse arch of the colon (both rather small) are situated in the lower and anterior parts of the left cavity of the chest; the lung of this side, as might be expected, has become a good deal reduced in size, and occupies only the superior and posterior part of its proper cavity. The great arch of the stomach lies atlantad. Right lung smaller than left, from the circumstance of the heart being so displaced by the stomach and colon, that instead of extending across the thorax from the second rib of the right side to the sixth of the left, as that viscus naturally does, it now lies nearly parallel with the spine, having the apex almost on a line with the coronary ligament of the liver. The right lung therefore is smaller than the left, because the heart, of ordinary size, and situated in the anterior part of that cavity proper to the former, proved much less yielding during inspiration than the stomach and colon were in the other.

It is probable, from appearances, that the wound of the diaphragm extended about three inches in a transverse direction, near to the centre of the dorsal attachments of that muscle. But as the objects forming the hernia have contracted firm adhesions to the parts formerly injured, and as the peritoneum lining the diaphragm seems in many places quite continuous with that covering the intestines which pass through the preternatural aperture, there is on that account considerable difficulty in ascertaining this point with due precision. Nevertheless, an attentive consideration of the positions of the parts will easily enable the examiner to account for all the symptoms which Barry complained of since being wounded in the manner above described. As, also, he enjoyed perfect health before that period, and was even remarked by his officers for being an active soldier, it follows of necessity that the singular malposition of the parts seen in the preparation must have been the result of a wound of the diaphragm, and was not congenital, as some who have seen the preparation seem inclined to consider it. To these last the following explanation of the symptoms may be given:—Why did the breathing of the patient always become affected when he walked fast or ascended a hill? Because of the capacity of the chest being diminished by the presence of the stomach and colon in it. Why the dyspeptic symptoms? Because the great arch of the stomach was turned upwards, and the parts otherwise displaced. Why did vomiting always occur when the patient took more than a small quantity of food? Because the distention of the stomach impeded respiration; and the latter function influenced that of the former to such a degree, that the nervus vagus, or pneumo-gastric nerves connected with both, became affected, and vomiting was the invariable consequence.

Altogether this case and preparation are exceedingly important, as showing that wounds of the diaphragm do not

necessarily prove fatal. It must, however, be confessed, that several circumstances were much in this patient's favour:—1st, It appears from the document, that for nearly forty-eight hours previous to the receipt of the injury, he had been unable to procure food; and his constitution also being hardened (if I may use the expression), by the exercise consequent on an active campaign, it may be supposed that little predisposition to inflammatory action existed. 2dly, But by far the most favourable circumstance for his recovery was that the diaphragm had been separated from its dorsal attachments instead of receiving an injury nearer the centre. In the former situation are but few branches of the phrenic nerve; and if here the muscular fibres had been detached from their origins, no reason can be mentioned why they should not adhere to the parts in their vicinity. In the latter, however, the accident probably would have been fatal; for as the fibres of the diaphragm converge towards one centre, any wound made in them could not heal, from antagonist forces keeping it open; and also, as the muscle is here plentifully supplied by branches of the important phrenic nerve, the probability is that some of these might be injured by the wound, which, being disturbed by every respiratory effort, such continued nervous irritation must have been produced as could not fail to destroy the patient.

I have taken some pains in examining the authorities as to wounds of the diaphragm. In several works, mention is made of recoveries from such injuries, but the patients are described as living in a state of great suffering, owing to the functions of the parts which may have protruded into the cavity of the chest being impeded. As far as I am aware, there is not a case on record of a displacement, such as that detailed above, being attended with so little inconvenience to the patient.

F. M'Crae, M.D.
Staff-Assistant Surgeon.

THE MEDICAL CHARITIES AND PLACES OF INSTRUCTION.

To the Editor of the Medical Gazette.

Sir,

In a late number of your journal, I read, with no small degree of satisfaction, a communication from Dr. Clendinning, the spirit and tone of which merit general attention. The Doctor very frankly admits that the position in which he is now placed, as physician to the Marylebone Workhouse, affords him a wide field for medical investigation, and dwells forcibly upon the advantages that should result to medicine and society, from such institutions, if conducted in the manner he proposes, recording all important cases, and giving them as wide a circulation as the periodicals of the day may enable. This looks like the dawn of a brighter day in British practice.

If we look at the great medical charities of this metropolis, and ask ourselves what have they done, either for medicine or society, we are puzzled for an answer. In this country we scarcely possess any body of facts, purely the result of British investigation, which in the present state of medicine can be classed as authorities; whilst hardly a year passes on the continent without adding something to the general stock. It is idle to refer us to Baillie, Hunter, &c., and others of their day, who did much in their time to improve the science; their discoveries, though great then, have long since ceased to surprise us. It is true we have now and then garbled facts, adduced by men who, as being partly unknown, and unconnected with large hospitals, seldom meet with that attention which their industry deserves. Had these men been placed at our public hospitals, their position would have given authority to facts, which the most powerful talents, in private practice, can hardly raise to ephemeral reputation.

It is only in hospitals that medicine can expect to make any advances to the nature of a fixed science. The mass of facts which may be there collected by a careful and diligent observation, bear so strongly on the cultivation of medical science, that he who neglects to record them, and give them publicity, is culpable in the last degree. In all other countries, hospitals—the emporia of disease, are considered as the peculiar property of the science of medicine, whilst with us they come under the denomination of stock-jobbing concerns. I will not suppose that the founders of those charities intended to pay the medical officers by a monopoly of the knowledge to be there acquired, though I confess it savours a little of it, neither can I bring myself to believe that they

were designed to benefit those only received within their walls; such a supposition would be a libel on the memories of the dead. It would be acting more in the charitable spirit of those good men, and more in unison with the great-happiness-principle, to extend their advantages to the greatest possible number, by a faithful record of their several cliniques. If the medical officers of those institutions cannot afford time for such minute inquiries, they perform but half their duties. It is not enough that they go through the usual routine of prescribing for A B C, noting one as pleurisy, another as enteritis, and a third as carditis; they have another and a paramount duty to perform—to make known the result of their experience upon numberless cases. This neglect has been productive of two evils of a very opposite nature, the one negative, the other positive. The negative arises from the indolence of physicians in not publishing the result of their experience. The positive, that a wide field is thus thrown open to young inexperienced physicians, who, becoming attached to dispensaries, generalize from solitary facts, and palm upon the young members of the profession their crude and illogical deductions, as the immutable laws of diseased and healthy animal action. This is an evil of great magnitude, a state even worse than positive ignorance. There are some, doubtless, who may find their account in this ignorance, and console the world with the doctrine of the poet, that since "Ignorance is bliss, 'tis folly to be wise;" but upon the grave questions of medical investigation, we should rather revert to the philosopher than the poet for consolation, "Iners remedium malorum est ignorantia." It is greatly to be lamented, that we should lose the great practical attainments of many of the hospital physicians, for whose acquirements I myself have the highest respect, but which cannot prevent me expressing my regret at their indifference to the welfare of the mass.

Our medical institutions are all conducted upon a system so totally at variance with the general interest of society, that the wonder is they have held together so long. What a contrast between our hospitals and those of France. France, liberal of every thing that concerns the welfare of human nature, addresses herself to the world, in the language of the poet, "Humani nihil a me alienum puto." In her hospitals are to be found "men of all climes that never met before," seeking from her professors that information for which their European reputation had distinguished them; whilst with us, the reputation of our great medical officers is marketable only within its own parish: this, as I have already said, does not arise from ignorance, or a want of extensive erudition, but because they cultivate medicine as a trade, not as a science.

The limits of a letter will not allow me to go the length that the importance of this subject demands; but in addition to many other evils arising from want of legitimate induction in medicine, I need only briefly allude to the various and contradictory theories of many of our aspirants for medical fame. One makes the alimentary canal the seat of all disease, and forthwith proceeds to purge; another places it in a superabundance of blood, and immediately prescribes the lancet; if both these fail, then come the rubbing sect, and thus in

"The space of one revolving moon,
We have *bleeder*, *purger*, *rubber*, and buffoon."

Your obedient servant,

MEDICUS.

March 18, 1835.

MEDICO-LEGAL REPORT ON A CASE OF SUSPECTED INFANTICIDE;

With Observations,

By M. MARC.
Physician to the King of the French.

THE *Annales d'Hygiène* (No. XXV.), lately published, contains the several documents from which we gather the following facts. There are no less than five *rapports* on the case; but as the last two, drawn up by MM. Mare, Capuron, Hauregard, D'Héré, and Guichard, embody all the principal details, our abstract shall be chiefly taken from them.

The medical jurists just mentioned were summoned on the 8th of April last to examine, in presence of the Commissary of Police, the body of a female infant, newly born, and to make report touching the nature of its death. They found the length of the child to be 19 inches and a line; from the head to the navel measured 10 inches, and from the navel to the sole of the foot 9 inches and 1 line. The cord was divided by a

clean transverse incision two lines from its insertion at the umbilicus. The condition of the nails on the fingers and toes, the hair of the head and eyebrows, the eyelashes, and the weight of the body (which was 5 lbs. 5 oz.), showed that the infant had most probably attained its intra-uterine maturity.

On the neck was a circular impression of two red concentrical rays, proceeding from before hindward and horizontally to the nape, where the lines were disjoined, leaving spaces, of the natural colour of the skin, between them. The impression was more red on the right than on the left side. In front, it passed between the larynx and os hyoides; behind, it occupied the space between the occipital bone and the first cervical vertebra. About the middle of the left side of the neck there was a longitudinal ecchymosis, in the track of the impression, extending over the space of about $3\frac{1}{2}$ lines, and about 1 line in breadth, of a cherry-red colour. On the right side of the neck there were three similar ecchymoses, and behind there was something like a slight excoriation observable.

Dissection showed that an ecchymosis existed beneath the marks on the neck at intervals, and corresponding to their entire length.

No lesion was detected about the larynx or trachea; nor was there any thing irregular in the appearance of the tongue or the mouth. But on the head there were remarkable lesions: externally, it was crushed from above downwards, with two livid spots on the forepart, the one extending along the left side, even to the occipital bone; the other on the right, not so extensive, but more livid, and to be traced no farther than the anterior portion of the parietal. A quantity of dark coagulated blood was found beneath these lividities. The scalp was deeply ecchymosed. On removing the periosteum, a fracture was seen involving the right parietal bone: it proceeded from a central point, dividing the bone into four angular pieces. The left parietal bone was also fractured.

On laying bare the brain, that organ was found shrunken, with sanguineous effusion in its convolutions. The vessels of the dura mater and the arachnoid were much gorged with black blood. The choroid plexuses and walls of the lateral ventricles were also injected. Behind the corpus callosum, towards the fourth ventricle, there was a considerable effusion of blood. Fluid black blood was found deposited at the base of the brain.

The internal examination of the chest displayed the lungs, not quite filling the cavity,—the left not covering the pericardium; their tint was a rose pink. They floated in water perfectly when thrown in wholly or in part; and their crepitation was very distinct. They were, moreover, quite healthy; and there was no appearance whatever of any evolution of a putrid gas about them. The heart contained no blood.

The small intestines were filled with meconium, of a dark green colour; that in the large intestine was yellowish. The bladder was empty. All the abdominal viscera sound.

The conclusions of the report were—1, That the infant had been born at the full time, and was *viable*. 2, That it had breathed. 3, That it was difficult to conceive that its death was owing to strangulation by the cord, for the circular impression did not correspond to the ordinary volume of the navel-string, and the separate rays seemed incompatible with that hypothesis. Even supposing the cord to have gone twice round the neck, and that in a parallel direction, still it would not account for the appearances. 4, But supposing that the infant had been strangled with the cord, it is equally unaccountable how the respiratory process should have been established, unless previous to the compression; and then there should have been some signs of that sort of death detected about the air passages and the chest. 5, The severe lesions of the head are quite sufficient to account for death; but it is not so easy to imagine that injuries so serious could have been produced by the fall of the child at the moment of delivery. 6, The explanation of the accused is this—that the infant, on being expelled from her, fell on the floor of the apartment; and that when she took it up and grew faint and insensible, it had a second fall from her arms. The mother is a woman of short stature: the length of her lower limbs, measured from the fourchette, is but 2 feet 7 inches; from her bosom to the ground measures about 3 feet and 1 inch. The second fall is more likely than the first to have done the fatal mischief to the head.

At a subsequent visit the pelvis of the accused mother was examined. It was

found to be larger than ordinary in its external proportions: the internal shape and size were normal; but nothing unusual was observed about the sexual parts. The placenta having been sought in the dust-hole where it was thrown, it was found to have an umbilical cord attached to it thirty-two inches in length.

These facts somewhat modified the final report; and the examiners gave it as their opinion that the dimensions of the pelvis, on the one hand, and the length of the funis, on the other, were sufficient to account for the sudden delivery of the infant, and its severe fall on the floor.

It further appears from the informations sworn, that when the accused was delivered she was alone in her chamber; that the infant fell on the ground; upon which the mother picked it up, and ran to the door to get a pair of scissars from her sister, who was in the next room. Having got them, she shut the door, and was approaching her bed, when she fell insensible. Upon coming to herself she raised the child, which had fallen a second time; she cut the umbilical cord, but the infant was dead. In consequence of this investigation of the case the charge of infanticide was abandoned.

Observations by M. Marc.

This is one of the most obscure cases I have met with; for beside that some authors, Klein among the number, question the possibility of ecchymoses being produced by the cord, the double ecchymosed furrow in the present instance was not of a volume corresponding with that of the funis. However, the considerable length of the umbilical cord in this case (thirty-two inches) is sufficient to explain, up to a certain point, the possibility of *two* circumvolutions being so formed as to leave a very small interval between them, and to produce several of the appearances described.

But how are we to account for the total absence of all sign of suffocation? We can only suppose that the compression of the cord subsisted during fœtal life, but ceased immediately after, or during, delivery; so that the infant was thus enabled to respire and to cry.

It is not easy to believe that the severe lesions of the head were effected by the first fall; more probably they were caused by the second, when the mother having fainted, and perhaps become convulsed, threw the infant with violence from her arms. This also would explain how, by a *contre-coup*, fracture might be produced on the side of the cranium opposite that first injured. (See my article on *Infanticide*, in the Dict. de Médecine.) It may be objected that the infant remained attached by the cord; but that cord, be it remembered, was nearly three feet in length.

As to the division of the cord within two lines of its insertion into the navel, no inference can be drawn in favour of, or against, the necessity of a ligature in this case; for, as the mother stated, the section was made after the infant's death; and, accordingly, we did not perceive the least sign of any umbilical hæmorrhage.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

Illustrations of the Botany and other Branches of the Natural History of the Himalayan Mountains, and of the Flora of Cashmere. By J. FORBES ROYLE. Parts III. IV. V. 4to.

Prodromus Floræ Peninsulæ Indiæ Orientalis: arranged according to the Natural System By ROBERT WIGHT, M.D. and G. A. WALKER ARNOTT. Vol. I. 8vo. pp. 480.

Contributions to the Botany of India. By ROBERT WIGHT, M.D. 8vo. pp. 136.

OF the first work on our list, we noticed the two preceding parts in our 13th vol. p. 976, and now return to it, as it has reached the half of its intended extent. The others we are induced to class along with it, because they refer to the same part of the world, and because they are arranged according to the same principles. We are thus enabled to take a connected view of the Flora of a vast portion of our Indian possessions, and contrast the vegetation of the plains and lower mountains of the Neelgherries with that which clothes the sides, and even summits, of the mighty Himalayan range: nay, further, the Prodromus forms a link by which we can continue our examination of tropical plants to the islands of the Indian Archepelago,

and, by means of Blume's Flora Javæ, extend our chain even to Australia; where we shall be aided by Brown's Prodromus Floræ Novæ Hollandiæ.

Thus has an important hiatus been most satisfactorily filled up; while the new genera and species, with which this and the other work of Dr. Wight have made us acquainted, are valuable as materials for calculating the degree in which certain tribes of plants predominate in the different localities. This interesting investigation, connected with the geography of plants, may be more easily pursued when the observations on the geographical distribution of the genera is supplied to the reader, which is promised in the second volume, and the absence of which is the only conspicuous defect in the present volume of the Prodromus.

In the parts of Mr. Royle's work now before us, forty-seven tribes of plants, of which members are to be found in India, chiefly on the Himalayan range, are treated of at greater or less length, according to their number or importance. Considerations are introduced connected with their structure, affinities, properties, and uses, both in ancient and modern times; and also with their geographical distribution, and the influence of climate. In these last respects, the tribe of the Malvaceæ, containing the cotton-plant, and the tribe of the Terustromiaceæ, containing the tea-plant, are the most ample.

Of the importance of these investigations we shall speak presently: their interest will be best known by quoting the words of the author.

"India would appear to be the *Medyhyama*, or central country, botanically, which the natives fancy it to be geographically. Thus we have seen the southern parts of India, including the Peninsula, Bengal, and the forests of Silhet and Chittagong, supporting a tropical vegetation, which in many respects approximates to the floras of the other equinoctial parts of Asia, as well as of America; while a strip of tropical jungle runs up along the southern or plainward base of the Himalayas, nearly to the most northern limits of Hindostan. The Himalayas themselves we have seen supporting a different vegetation at different elevations:—Indian, at the base and within the valleys, European as we ascend, and almost polar when we reach the summits of lofty mountains, which are only for a few months freed from their covering of snow. Intermixed with the Indian and European-like floras, we have many of the genera, and even species, which were thought peculiar to China, as fully detailed in the account of the tea-plants; and with these many also of the genera which were considered as existing only in North America."—*Royle*, p. 158.

Of his arguments in favour of the successful cultivation of cotton in India we shall say nothing, as their correctness has been demonstrated by the fact, that some cotton from Bombay has been sold at Liverpool for one shilling a pound, which was more than three-fourths of the American cotton was then selling for.

We are convinced that no one save he whose mind was deeply imbued with the principles of philosophic botany, could have presented the varied yet exact considerations connected with the proposed cultivation of the tea-plant in India, on the sides of the Himalaya; and the success, which we venture to predict will attend the experiment, will prove at once their soundness and the scientific character of the views of the author of this work. Indeed, we rise from an attentive examination of this work, in doubt whether the botanical knowledge which it displays and imparts, or the patriotic spirit which pervades it, calls for the higher admiration. We are, however, certain, that every botanist who desires to demonstrate what are the practical uses of his study, may appeal to it with satisfaction, to shew its bearings upon the affairs of life; while the merchant who is interested in the produce of the East should patronize it, as contributing largely to promote a just knowledge of the resources of that vast empire, the improvement of which would materially increase the commercial greatness of Britain and of India.

The present volume of the Prodromus, following the arrangement of Decandolle, contains eighty-three orders, and a detailed description of 1365 species of plants. The authors, in their preface, state the reasons which induced them to adopt the natural arrangement. These are of course quite satisfactory to every one interested in the progress of scientific botany, in opposition to that which consists only of a muster-roll of names. In consequence of adopting this

arrangement, it becomes a valuable key to the properties of the vegetable productions of the Indian Peninsula; and as the size renders it very portable, it should form a part of the library of outfit of every medical officer proceeding to India, as the best means of making himself acquainted with the peculiarities of the novel forms by which he will find himself surrounded, and from the careful investigation of which he may, perhaps, be rewarded with the discovery of the means of curing many of those diseases which we now scarcely possess the power of alleviating.

The contributions to the botany of India consist in an enumeration and description of plants found in the Herbaria of Dr. Wight, Wallich, and Royle, belonging to the three tribes of the Compositæ, Aselepiadeæ, and Cyperaceæ. Of these, the first has been drawn up by the younger Decandolle, the second by Messrs. Wight and Arnott, and the third by Ch. G. Nees von Esenbeck. Their value may therefore be inferred from this fact, independent of their intrinsic interest.

Pathological Researches on Phthisis. By E. Ch. A. Louis, Physician to the Hospital of La Pitié, &c. *Translated from the French; with Introduction, Notes, Additions, and an Essay on Treatment.* By Charles Cowan, M.D., &c.

We are glad to find this admirable work of M. Louis' introduced to English readers in so very satisfactory a form. The history of the original is curious. It is the production of a man who has made great sacrifices of time and money in the pursuit of truth, and who, if *any* medical inquirer of recent times may boast of the success of his endeavours in that respect, has certainly not sacrificed in vain. At the very time of life when most men have fully adopted the principles on which they propose to act for the remainder of their career, M. Louis surrendered those which he had acquired in the schools, and set himself down to the attainment of others which he deemed more worthy, if not alone worthy, of his best exertions. He had studied and practised medicine in Russia, and was now 33 years of age, when he visited Paris, and became strongly attracted by the doctrines of Broussais. He followed the clinical practice of that celebrated physician for some time, and eagerly examined his writings; but the result was unfavourable. The impression produced upon his mind by M. Broussais' system and mode of proceeding was, that while that distinguished person so clearly convinced others of error, he was very far from demonstrating himself to be in the right. M. Louis found himself, in consequence, compelled to strike out some more likely track by which to reach the object he had in view. He resolved thenceforth to devote himself exclusively to the method of *observation*, and with a rare example of modesty combined with determination, entered La Charité as a clinical clerk under M. Chomel. For nearly seven years—the best years of life, perhaps, for active labour, whether bodily or mental (from 33 to 40)—he consecrated the whole of his time and talents to rigorous impartial observation. He relinquished all private practice, and allowed no considerations of personal emolument to interfere with the resolution he had adopted. It required immense perseverance and strength of mind to overcome the difficulties that beset him during this period; but he came off triumphant: his success was generally acknowledged; and he now ranks (he has been physician to La Pitié for the last five years) as one of the ablest—perhaps the most sagacious—of practitioners in his own, or any other country.

Let us, however, come more particularly to the work on Phthisis, of which we wish to give our readers some idea: we do not intend to give them a sample of its contents, but rather to tell them what it is made of, and how it has been constructed. For this purpose we shall allow M. Louis, through his interpreter, to relate his own story: we quote from the preface.

"Very shortly after we had exclusively devoted ourselves to observation, we ascertained that in the progress of phthisis, as in that of other chronic diseases, the greater number of the functions are remarkably disturbed; that the organs which discharge them are more or less profoundly affected, and that with regard to both these points the history of the disease was very incomplete, or almost wholly neglected; the hope of supplying this deficiency was the source of our present undertaking. Numerous facts early indicated to us,

that the history of phthisis could be elucidated by new observations, and this conviction was an additional motive for persevering in those investigations, of which the volume now presented to the reader is the result.

"In order to secure the greatest possible utility to our labours, we have observed phthisical patients with the same care we employed in collecting the history of those attacked by a disease (affection typhöide) still little known; we have interrogated *all* the functions, and reverted as far as possible to their respective derangements, previous to our examination of the patient; and after death we have studied all the viscera with equal attention. This method was tedious, but simple and certain; it could not but lead to exact results, and this impression has rendered light the fatigue it necessarily included.

"Fully convinced of the importance of *negative* facts, and recollecting the embarrassment and regrets of Morgagni, when, on examining the observations of Valsalva, he found no mention of well-attested facts of this description, we have collected them with as much care as the most interesting of our affirmative ones; we have even noted down indiscriminately whatever the patients related respecting the alteration of their health at any period of their lives, provided always, that the circumstances of the recital gave evidence of its truth:—we left to future opportunities, and the post-mortem examination, the task of pointing out the facts to be retained or suppressed. It is easy to form a just idea of the importance of negative facts, if we reflect that organs, when their structure is extensively modified, frequently give rise to no appreciable symptoms, and that, if this absence of symptoms has not been expressly specified, we cannot form a proper estimate of the value of post-mortem appearances. Hence also the necessity of examining *all* the functions, whether apparently disturbed in their exercise or not:—another method may suffice for the verification of what observers have already remarked, but it can conduct us no farther.

"To remove all doubts as to the value of our notes, we have always mentioned the state of the patient's intellectual powers; quite decided, when we had to investigate facts anterior to the period of our own observation, only to rely on those patients whose faculties, and more especially whose memory, possessed a certain degree of development.

"We have paid great attention to the mode of *questioning* invalids, for there are certain questions which almost inevitably dictate the answer. As, for instance, if we wished to discover whether the patient experienced pain, or any uneasy sensation on either side of the chest, we mentioned first the side where we supposed the pain did not exist; if he then indicated the other side as the seat of his sufferings, we regarded the fact as certain, and entered it as such. For the determination of dates, important to ascertain, we frequently recurred to the subject, asking the patient, not, if he had experienced such a symptom for such a time, but how long he had experienced it. It is evident, that to the first question a patient, annoyed or weary, might answer indifferently yes or no, while at the second he is compelled to reflect, and by a mere haphazard reply cannot so easily lead into error.

"After death, we have described with all the precision of which we are capable, the situation, the form, the colour, the consistence, and the thickness of organs; in a word, every alteration of tissue which they might present. To effect this, we have never examined the viscera, with the exception of the brain, in their natural connexions; for in this situation they are generally insufficiently illuminated, and in the case of organs which are membranous, thin, and compound in their structure, as the stomach and intestines, their thickness and consistence cannot be properly appreciated, and it is also difficult to examine the whole of their extent; at the same time many alterations, such as small superficial ulcerations, almost inevitably escape our notice. In these cases, to see clearly, we must not only remove the parts, but free them by repeated washings from the various substances which adhere to them, and, as was almost constantly our practice, immerse them for an hour or two in water."

After some examples of the application of this method, he proceeds:—

"The observations on which our researches are founded, were collected at the hospital of La Charité, commencing from the last three months of 1821. Since that period, we have noted down the history of all the patients admitted

into the wards of M. Chomel, containing forty-eight beds, equally distributed between men and women. The same plan has been pursued in the description of every case, and as the exactness necessary for such a task did not appear compatible with the practice of medicine, the latter was, for a time at least, relinquished. We have since regularly passed from three to four, and sometimes five hours a day at the hospital, devoting at least two hours to each post-mortem examination; and although habit has necessarily familiarised us with anatomical researches, we give up at the present moment as much time as we did two years ago, fully persuaded that to observe *well*, we must not observe *hastily;* that the only means to rectify inevitable errors, is continually to re-examine, and consequently always to observe an object, however familiar, as if presented to us for the first time.

"By comparing our latest observations with those formerly collected, we have been enabled to convince ourselves of the advantages that would result, at least when there is any intention of publishing, from having observed at an age when we can estimate things at their real value; when experience has already warned us against every species of illusion and theory, and where the first mental want is that of *truth*. Study was not less attractive to us formerly than it is at present, but a theory presented with art was not without its allurements: precision was less studied, and we devoted less time to the determination of facts. These mental tendencies, so contrary to sound observation, were at once depending on deficient experience and the spirit of the age; very few escaped their influence, and, if for no other reason, we ought to place less reliance on the labours of young observers, and especially avoid devolving the task of observation exclusively upon them. Independently of the disadvantages of age, it may be also said with truth, that we cannot observe for others with the same zeal, the same assiduity, the same precision, that we would employ for ourselves. The natural philosopher who wishes to advance the progress of science, does he let another make his experiments? The chemist, does he confide the operation of analysis to one just entering upon his career? And if, as indeed is the case, there is complete analogy between the physician who observes, the natural philosopher who experiments, and the chemist who analyses, why should they adopt a different method in their inquiries? It is not enough to know that individual observations are necessary in medicine, unless we are at the same time convinced, that to render them valuable, much zeal, much time, and much practice, are required;—practice, we repeat, for to collect observations is a *trade*, and, like all other trades, must be learned, and cannot be divined.

"The reader will pardon us, perhaps, for having insisted so much on the care we have bestowed on the collection of our facts, and upon the distrust with which part of those daily published ought to be received, if he reflects, that *the edifice of medicine reposes entirely upon facts, and that truth cannot be elicited, but from those which have been well and completely observed.* Then, and then only, we shall be enabled to discover, in a series of observations, the data of a problem consisting of many quantities whose value is unknown; and since in mathematics, this value does not vary with the individuals who engage in the solution of the problem, we ought also in medicine to arrive at identical results, by the analysis of the same observations; always admitting, that where a mind of ordinary power arrives at few general deductions, one of superior capacity, from its power of examining the particular facts under more varied aspects, will discover a greater number; but it is inevitable that exact observations, studied under the same point of view, must conduct every one who attentively considers them, to identical conclusions. All is not then obscure or uncertain in medicine, when the observations which guide us are exact; but what results can be obtained from the consideration of facts which are doubtful, incomplete, or false?"

The plan of the work is simple. In the first part, which is devoted to the pathological anatomy, all the organic lesions are noticed, as observed in the fatal cases. The second part contains the history of the symptoms; and these are most full, comprehending, either affirmatively or negatively, notes upon the functions of every important organ. M. Louis' remarks on treatment are brief;

but every deficiency of that sort in the original is amply supplied by the additions of Dr. Cowan in his translation, who has, indeed, throughout shewn himself a very able and efficient expounder of the valuable performance which he undertook to illustrate.

MEDICAL GAZETTE.

Saturday, March 21, 1835.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

CICERO.

THE "SCHEME" OF DEALING IN MEDICAL DEGREES ABANDONED.

So!—the question of the London *University* having a charter, with the privilege of conferring degrees in medicine, has at last been definitively disposed of; and we need scarcely add, that it has been settled in the negative. After repeated applications to Parliament, after an annual siege of the Home Office, and after various petitions to the King—nay, after a pilgrimage from Guildhall to St. James's, of "wise men from the East,"—to this most lame and impotent conclusion have they come at last. So confident—so presumptuously confident, were they in the expectation of possessing the very unfair advantage which they sought to obtain over the other schools, that they actually announced in their prospectuses, not only that certain degrees would be conferred, but stated the time at which this would be done! It was not without cause, then, that we denounced this fanfaronade as an unworthy artifice to attract the notice of those at a distance) for it is on the supply of pupils from the country that they have all along depended); and it was not without sufficient reason that we set about opposing their "scheme" by every fair means of ridicule and exposure, followed up by the more substantial step of having the true state of the question brought fully under the notice of the members of the government. It is not assuming too much to suppose, that the delay of what the parties had, at one time, all but in their grasp, and the present prospect of its speedy and final withdrawal, are in part at least attributable to the persevering and active opposition with which this nefarious attempt to raise a new medical school on the ruin of all the others, has been met in the pages of this journal. In this respect we have the satisfaction of reflecting, that we "have done the state some service."

When we drew attention, immediately after the assembling of Parliament, to Mr. Tooke's notice of a motion, having for its object to procure a charter for the London University, with the power of conferring degrees in medicine, we called upon those connected with the other schools to petition the House of Commons against the perpetration of such an injustice. Accordingly, petitions were got ready to be presented at the proper moment, and immediate communication was held with the Secretary for the Home Department. Numerous members of the opposition were also made acquainted with the facts; and we are quite satisfied, that Mr. Tooke's motion, if pressed, would have been negatived by a large majority. The declaration of Mr. Warburton against the motion, who, as Chairman of the Medical Committee, had heard the sentiments of the profession at large, would alone have been fatal to it; and the fact of his having stepped forward on this occasion shews in honourable contrast to the skulking silence of that member of our fraternity to whom accident has given a seat in Parliament, and who,

had he possessed one atom of candour or liberality, would not have left it for another, and a layman, to stand up in our defence; for we hold, that whether or not an association of speculating shareholders shall be allowed to deal in medical degrees, is a question involving the honour of the whole profession.

On its own merits, and on the *disinterested* advocacy of the Lancet, the London University must hereafter depend for its success; and we really do not think lightly of either. We know that it possesses several clever and accomplished teachers, but we also know that some of those who are now puffed so outrageously by our contemporary, were, a few years ago, held up to contempt in his candid and consistent pages. To the result of fair competition, even with the aid of what we may call its own proper journal, we object not: what we have set our faces against is the unfair attempt to ride over the other schools, by the mere weight of exclusive privilege; the effort to secure, by parliamentary interference, a monopoly, at the moment they professed to be opposed to every thing illiberal; the dishonest announcement of degrees in reversion, when they had not them to give, and well knew that it was extremely doubtful if they would ever succeed in obtaining such power.

However, it appears from what passed in the House of Commons on Tuesday, that the question is at length settled. Mr. Tooke said, "he was glad to be enabled to state, that understanding that there was reason to suppose that a medical board would be constituted in London, for the purpose of examining all candidates, and conferring degrees in the various branches of medicine and surgery, to which all the schools would be subject, he apprehended that the University of London would be recommended to agree to a restriction as to the power of conferring degrees in medicine as well as divinity."

The arrangements alluded to we understand to be as follow:—Neither the London University nor King's College are to have the privilege of conferring degrees in theology, law, or medicine,—so that, in fact, they are to have nothing to do with the learned professions as regards the bestowing of licenses or honorary distinctions. The latter body already has, and the former is to have, a charter of incorporation, like many of the hospitals and other public institutions; besides which, they are both to be permitted to confer upon young gentlemen who have passed creditably through their preliminary general education, some mark or certificate of having done so by constituting them "*Associates* in arts." This is the appellation which we understand has been proposed, but we know not whether it has been definitively adopted; the only point being to select some appropriate title which shall not be confounded with the degree of Bachelor conferred by the English Universities. This is an arrangement which, while it bestows on the London University all the prerogative it has the slightest pretension to require, and on King's College all it ever asked, will have the advantage of holding out an encouragement to the preliminary studies, while it keeps the profession free from the immediate control of those engaged in teaching, and prevents medical diplomas from becoming the property of those who might convert academic honours into marketable commodities. The settlement of the question is earnestly to be desired, and we trust that the above, coupled with Mr. Warburton's expected bill, will accomplish the end in view.

The recent changes in the College of Physicians, sanctioned as they are by

the ministers, will no doubt anticipate some improvements which would otherwise have been contained in the expected measure, while they will probably be opposed to others; so that we do not expect that our friends in Pall-Mall will escape without some token of the honourable member's *regard*. Mr. Tooke, it will be observed, in the extract which we have given above, assumes that a board is to be appointed for the purpose of conferring medical degrees; and as it is quite clear that he has come to some understanding with ministers upon the subject of his motion, there can be little doubt about the authority on which this statement was made.

DEATH OF M. LOBSTEIN.

This venerable and distinguished member of our profession died on the 7th instant, of disease of the bladder. His chief published works are, Researches on the Nourishment of the Fœtus, an Essay on the Great Sympathetic Nerve, and a System of Pathological Anatomy. The school of Strasburg has thus lost two of its brightest ornaments within a very limited period,—Foderé, whose death we announced a few weeks ago, and now M. Lobstein.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Henry Earle, Esq. President, in the Chair.

Tuesday, March 10, 1835.

A physiological paper was this evening read to the society, by Robert Lee, M.D. F.R.S., which was entitled—

Observations on the Functions of the Fœtal Kidney.

The author began by stating, that in the works of systematic writers on Physiology, little or on positive information is contained respecting the functions of the kidneys previous to birth. Haller, Blumenbach, Meckel, Bostock, and Mayo, he observed, had scarcely alluded to the subject, and Magendie asserts that the condition of the fœtal kidneys had not been ascertained, and that it is not known whether the kidneys form urine, or whether this fluid passes by the urethra into the cavity of the amnion. Abernethy was of opinion that the kidneys did not secrete urine till after birth, though some of the older writers believed the liquor amnii to be chiefly formed of the urine of the child.

The author then proceeded to state certain facts which he thought demonstrated that the kidneys of the human fœtus, like the liver, intestinal canal, and thymus gland, are in a state of activity, and perform each its respective function prior to birth.

Mr. Hay, of Osnaburgh-Street, presented to Dr. Lee the kidneys of a still-born female child. Both ureters were impervious; and the pelvis of each kidney was greatly distended with a fluid which had the appearance of urine. The left kidney contained four ounces, the right nine ounces, of this fluid, which was analysed by Dr. Prout, and found to contain both uric acid and urea. A portion of the fluid, containing a deposition of lithic acid crystals, was exhibited to the society; and Dr. Prout concluded from the results of this examination, that the fluid from the kidneys of this fœtus with impervious ureters was of a urinary nature, and rendered it probable that as the liver in the fœtus secretes bile, so the kidneys secrete urine, long anterior to birth; and that, in a perfect state of the organs, the fluid is constantly escaping through the bladder. This fact, Dr. Prout remarked, had been often suspected, or rather taken for granted, but had never before to his knowledge been proved.

Dr. Lee then proceeded to state, that on the 12th of February last he had induced premature labour for deformed pelvis, in a patient who was six months pregnant, and had drawn off thirty-two ounces of pure liquor amnii with a slender silver catheter. Neither Drs. Prout nor Bostock could discover any trace of urea, or uric acid, in its composition. This observation renders it probable that a small quantity only of urine is formed by the fœtal kidneys at this early period of gestation.

Dr. Lee had not succeeded in procuring specimens of pure liquor amnii at the end of pregnancy for analysis, though he had used every exertion for that purpose; but the presence of benzoic acid and urea, said by Berzelius to have been detected in the liquor amnii of the human subject by Fromnherz and Gaugert, proved, he thought, that the urine of the fœtus flows from the bladder, and mixes with this fluid in the latter months.

The author then quoted a remarkable case of a child with imperforate urethra, recorded by Mr. Howship, in which the bladder, ureters, and kidneys, were all distended with a fluid which had the characters of urine, and was believed by Mr. Howship to be urinary in its nature, though it was not chemically analysed.

Two beautiful drawings by Mr. Howship, taken twenty-five years ago from the parts soon after their removal from the body, were exhibited to the members of the society, and also a preparation of the parts themselves.

Dr. Lee's preparations were also handed round. The right kidney formed a sac, which was equal in size to the head of the child.

Sir B. Brodie informed Mr. Howship, that many years ago he had met with a male fœtus, in whom the external orifice of the urethra was impervious, and the bladder was moderately distended with urine, as were the infundibula and pelvis of each kidney. The urine was examined by Mr. Brande, who found it to have the other properties of urine, but to have no uric acid in its composition.

Dr. Lee next related a case from M. Billard's work, of a child who, four days after birth, had a round soft tumor in the lumbar region. On examination after death, this was found to be the right kidney, which consisted of a mass as large as a goose's egg, of semi-transparent lobules, irregularly agglomerated together, forming so many small cysts, full of a white inodorous fluid. The ureter was impervious. The bladder contained turbid urine, in which was found a great number of small particles of gravel as fine as sand. Another case of a still-born fœtus was quoted from the same author, in which the urethra was impervious, and the bladder contained an enormous quantity of a white inodorous fluid, which did not render trumsol paper green.

Dr. Lee concluded his paper, which seemed to excite much interest in the society, with a remark from M. Billard, that these observations might serve to prove that the excretions of the fœtus, at least those of the urinary organs, are passed in the natural state out of the body, and probably deposited in the liquor amnii; or, where there exists an obstacle to the passage of the urine, it flows back into its reservoirs, and distends them preternaturally, as we see in adults who are affected with stricture of the urethra, or paralysis of the bladder. This remark may hereafter find a place in the history of embryology.

Case of Disease of the Hip-joint resembling Fracture of the Cervix. By Mr. Cæsar Hawkins.

After some remarks upon the frequent discussions relative to union of the cervix femoris, Mr. Hawkins observed, that it was now generally agreed that union by bone, after fracture within the capsular ligament, was a very rare occurrence, and that many of the preparations formerly supposed to be examples of such union, were acknowledged to be specimens of a peculiar sinking of the head to a level with, or below, the trochanter, with shortening of the neck of the bone.

This change of structure has been well described by Sir Astley Cooper and other authors; but all the descriptions have been taken from dried preparations, or from the dissecting-room, and in none of them has the history been traced to an injury, with a knowledge of its subsequent progress. Examinations in the dissecting-room shewed that the appearances of the affected limb were very similar to those occasioned by fracture of the cervix; and Mr. Hawkins shewed some preparations which he had taken from a subject in the dissecting-room, in which he had observed these symptoms, and the sections of the bone looked very like the consequences of fracture; but as *both thighs* were in the same condition nearly, Mr. Hawkins expressed his opinion that they were deceptive only, and had arisen in reality from the disease in question. Like all preparations, however, obtained in this manner, without any history obtained during the patients' lives, there was a difference of opinion with regard to the cause of the sinking of the bone, and therefore the following history becomes very valuable.

An elderly woman, above 70 years of age, was placed under Mr. Hawkins's care, three days after having fallen down some steps upon the hip. She was unable to support her weight, or to move the limb, except to bend it a little with much pain. The toes were everted, but could be moved inwards with some pain; and the trochanter moved when turned in a smaller circle than the other thigh. The thigh was about three-quarters of an inch shorter than the sound one. There was also some bruise and tumefaction about the neck of the thigh-bone, with an indistinct sensation of crepitus. In short, Mr. Hawkins concluded that there was a fracture, by which the neck of the bone had been partly driven down between the two trochanters. The patient died of bronchitis thirty-eight days after the accident, having previously lost the pain and inflammation around the injured hip.

Some blood was found around the hip, and a drop or two within the capsule, but no fracture was found, nor any laceration of the bone. The upper part of the bone was sawn through longitudinally, and three preparations of these sections were exhibited. The interior of the bone was very vascular and dark, as if with extravasated blood, though none was really effused. In one section a white line was traced, having very much the appearance of an united fracture; but a quarter of an inch from this, another section shewed a different appearance, without any white line. The head and trochanter were approximated with depression of the neck to nearly a horizontal line. The other thigh-bone was exhibited to the society, the sections of which exhibited a softening and increase of vascularity, but without any alteration of figure; and other bones in the body were also softened, so as to be cut with a knife.

The case, therefore, was a curious coincidence of a blow just calculated to produce a fracture of the cervix, with disease (which Mr. Hawkins said must have existed *previous* to the injury); the symptoms of this disease being exactly like those of fracture, and the appearances on a *single* section being also such as a fracture might have occasioned, if complete union by bone had been possible in a weak person of her age in so short a time. Had the bone been examined in one part only, it might even now be supposed by some persons that the line across the cervix was that of a fracture; but as another section, a quarter of an inch only anterior to the other, exhibited no such appearance, this opinion was of course untenable.

Mr. Hawkins concluded by saying, that it could not be imagined that the disease had been *produced* by the blow, since the symptoms were in some respects better marked, from the presence of inflammation, at the time he first saw the patient, than they were at the time of her death, and since the same change of structure had commenced in the opposite thigh, and in other bones.

During the discussion which followed the reading of Mr. Hawkins's paper, some members observed that there might have been a *partial fracture;* but the preparation, Mr. Hawkins said, clearly proved that this was impossible, since, although the appearances of the section might be the same in fracture across a part of the bone, and in the disease in question, no partial fracture could *in this case* account for the depression of the head, and its approximation to the trochanter. In some cases a partial fracture across the *upper* or the *lower* part of the cervix might no doubt allow the limb to be shortened by the remaining part of the bone bending downwards, as it did in partial fracture in young children; but the preparations shewed an apparent line of fracture only in the *posterior* section of the bone, and none in the *anterior*, so that the neck of the thigh-bone could not be shortened, had there been any fracture in this part of it.

CLINICAL LECTURE

ON

DISEASES OF THE KNEE-JOINT.

Delivered at the Middlesex Hospital, Dec. 6, 1834,

By Sir Charles Bell.

We shall continue the subject on which I addressed you last Saturday—diseases of the joints; and I must now more especially lead your attention to the knee-joint. I am sure that you have seen enough of the accidents and diseases to which the joint is liable, in the last half-hour, to mark its importance.

[The house-surgeon then read from the case-book the following list:—]

———— ————, injury of the knee by a fall.

Sarah Hinde, fractured patella.

Elizabeth Walpole, injury of the knee, previously affected with scrofula.

Susan Lyon, inflamed bursa.

Ann Brown, inflamed bursa, in a state of ulceration.

Mary Haller, hydrops articuli.

Susan Pontill, inflamed synovial membrane.

Susan Walsh, inflamed synovial membrane, with apparent enlargement of the bones.

Martha Meredith and William Quin, scrofulous disease, with great swelling of the knee-joint.

Susan Hunt and Sarah Oliver, acute pain of the knee, attended with hysterical symptoms.

John Stephens, knee contracted from rheumatism. Post-mortem.

Mary Davis, sympathetic pain in the knee, from inflamed hip.

Francis Phillips, scrofulous knee; true white swelling*.

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* In addition to these, there have come into the hospital in the present week — a case of loose cartilage in the knee, and of a sprain, described to be from over-bending of the knee-joint, and supposed displacement of the cartilages.

Here then, gentlemen, is an argument eloquently delivered. By this simple enumeration you are told that you have no apology for ignorance of this subject; you have every opportunity of studying it. I shall limit my endeavours to the statement of some principles and of some circumstances; for the rest, you have but to look about you.

In the first place, why is it that the knee-joint is so frequently the seat of injury and disease? Because the bones are very large, and it is the largest and most superficial articulation of the body. The superficial position of the bones, and of the complex apparatus of the joint, make it not only liable to the influence of cold, to changes of temperature, but also to the influence of constitutional weakness. You will find, for example, that when there is disease of the bones, it is generally the superficial bones that exhibit the effects first, and to the highest degree; and when scrofulous disease affects the ligamentous textures, the knee-joint is the most exposed to that influence.

The knee-joint being composed of bones which form each a large surface, and which have no socketing, there is no strength of the articulation from the mechanical adaptation of the one bone to the other, as in the hip-joint, for example; the surfaces are little more than placed in simple contact: hence it is necessary that the ligaments should be strong and numerous. I think you enumerate some sixteen ligaments as belonging to the knee-joint. Then, with regard to the synovial membrane, you know that it extends much further in the knee-joint than in any other, and necessarily so, not only because of the size of the joint, but from its being continued under the patella, and under the tendon of the quadriceps muscle. If the puncture of a joint be dangerous, the puncture of a joint the cavity of which is the largest, will be the most dangerous. Hence it is that the knee-joint is most exposed to injury, to constitutional influence, and that, when inflamed, the case is more formidable than when there is a similar affection of any other joint.

The very last case we looked at in the ward was an instance of a blow upon the knee-joint. Now that blow with a sharp stone upon the head of the femur, where it is covered by a reflection of the synovial membrane, is an injury to that membrane; and you may observe, as in that case, that the inflammation from such an accident rises very slowly—that is the character of the part; but at length the inflammation rises to an excess which you can scarcely describe in words too strong. This peculiarity is much more remarkable when the capsule is punctured, than when it is hit and injured by a sharp corner without being punctured; the inflammation comes on very, very slowly, and you may be thrown off your guard, because many days may elapse before the utmost violence of the inflammation is exhibited. But at length you see the patient tossing with pain, rigid—not with convulsions or tetanus, but in the expression of intense suffering; his countenance flushed, his eye brilliant, and his pulse indicating the very excess of inflammatory action. Mark, then, that the inflammation of the knee-joint is attended with all this violence, but comes on so slowly that you are very apt to be deceived, and allow the patient to exercise a freedom of the limb which you have afterwards much reason to regret.

You will naturally inquire, what is to be done in these cases? When once you have seen a patient in this excess of fever and inflammation, you will observe the necessity of general bleeding, not merely to avoid the injury of the joint itself, but to prevent the violence of the action falling (of which, from the degree of excitement, there is danger), upon some other more important and vital organ. For these two reasons you bleed generally; and then comes the necessity for repeated local bleeding and fomentations. You find the patients treated by purging, and the saline draught with antimony; but frequently there is a necessity of giving calomel and opium to quiet pain, and sometimes colchicum. By this time you will find not only the joint, but the limb, tumid all over; and when the violence of the pain and inflammation has a little subsided, you must cover it with slips of linen dipped in the ceratum plumbi acetatis and diachylon, so as to counteract in a slight degree the effusion which takes place in the cellular membrane. You mark with great care the coming on of abscess, and you open it early, otherwise the matter will burrow among the muscles. You will remember that it does not necessarily follow that these suppurations are connected with the knee-joint; they are often consequent upon the violence of inflammatory action in the limb, and are quite different from the abscess which you see accompanying white swelling.

What is the termination? Generally, in anchylosis. The question will arise, in practice, what you are to do when the limb is getting fixed; whether you are to say that the anchylosis is a happy termination of the inflammation, with which you shall not interfere, or whether you are to attempt the restoration of the motion of the limb. Where you have a scrofulous constitution to deal with, you had

better let the joint alone, and be satisfied with a stiff limb; but where there is youth and health, and no disposition to disease of the joints, no strumous tendency, you may begin to work upon it with embrocations, with friction, and with passive motion; that is to say, if you find the surfaces are not actually grown together by bone, you may by friction, warm oils, and motion (not under the effort of the patient, but by the hand of the rubber), gradually relieve the adhesion of the parts, and give freedom to the tendons in their sheaths. It is surprising how readily the whole apparatus of the joint is redeemable by being put to use. You will, however, be prepared for this, when you observe how a joint is formed when a bone is broken. If a broken bone, by motion, form a joint, how much more likely is a natural joint to become again moveable, though much disfigured and much destroyed in all its natural apparatus;—upon the great principle of Mr. Hunter, "put the part to its proper use, and the natural structure will be rebuilt."

Last season there were some very interesting cases, which I may again shortly mention. There were two cases in which the knee-joint was opened; one of them was by an accidental wound, and in the other the operation was performed for extracting a loose cartilage: in both, the inflammation arose to the most severe degree. I will not hold up these cases to you in contrast again, but take the opportunity of pointing out to you a mode of avoiding the operation of extracting loose cartilages; and I am never more happy than when I can arrest your hand in using the scalpel, by the flourish of which so many surgeons at home and abroad obtain most undeserved reputation.

I alluded to one effect of these violent injuries of the joint — the formation of loose cartilages. You hardly ever find a patient with loose cartilage but you learn that at some previous time there has been an injury and a violent inflammation; so that it is a prevailing, and, I believe, correct opinion, that these loose cartilages result from an inflammatory process affecting the natural cartilages. However that may be, the symptoms are so distressing that we are tempted to cut into the joint and extract the loose body. But I mentioned to you, that the great advantage which we have in London, is the number of eminent and highly scientific and well-informed men, with whom we have occasionally an opportunity of consulting, and I take advantage of that circumstance now. In a conversation with that deservedly-eminent surgeon, Mr. Copeland, he told me that he has on several occasions destroyed the loose cartilage without the necessity of opening the joint; and the manner of doing it is to push up the loose body into the corner of the reflected capsule on the inside of the knee-joint, for example; and having got it there, to fix it. The manner is this: a ring is put on the prominence which marks the place of the cartilage; then a compress, adhesive strap, and finally a bandage. By this means the loose cartilage is fixed, and in time adheres; after which it is absorbed, or dissipated. I am quite sure, that if you remember the effects of a puncture of the knee-joint, whether accidental or done with all the care of the surgeon, and the destructive inflammation that sometimes arises from it, the violence of the suffering, and it may be the loss of the limb or of the life, you will be grateful for this exercise of ingenuity and of successful practice.

I will now advert to the case of

Hydrops Articuli.

"Mary Haller, æt. 26, admitted November 18th. She observed a swelling of the knee a year ago, but had no pain in the swelling. She fomented the joint, gave it rest, and had it bound up; and in a week the swelling went down. Three months ago, the knee began to swell again; she bound it up, and the swelling disappeared. Three weeks ago it again began to swell. On her admission into the hospital the knee was puffy and swollen, chiefly above the patella. When the tendon of the quadriceps was pressed upon, the patella was raised up. There was no pain, except on going up stairs, and the knee was but little bent. The ankle was formerly similarly affected, but got well by bandaging. She was ordered a draught, with a grain of quinine and of sulph. of iron, with infusion of orange-peel; the knee to be surrounded with slips of lint, spread with ung. hydriod. potassæ, and rolled from the foot. In a few days the swelling almost entirely disappeared."

Now this case brings us to reflect on the synovial secretion; and the first remark that I must make, I think may be of use to you hereafter; and I also think that the subject is too little adverted to in practical books—viz. that a slight inflammation of the synovial membrane will cause, we will not say the absorption of synovia, but a defect of the secretion of the synovia. The consequence of this deficient secretion is, that the joint, as it were, jars upon the hinge; the two surfaces of the cartilage come into such perfect contact that there is a jar, or crepitus, and very often, after certain injuries, the practitioner believes that he has got a fracture, attended with distinct crepitus, when it is only the motion of the two cartilaginous surfaces upon each

other, consequent upon there being no synovia in the joint, that produces the sound.

The next observation I would make is, that in dropsy of the joint, as it is called, the attack may have been inflammatory at first—that is to say, a copious secretion is thrown out in the second stage of inflammation; it may be therefore true that this effusion is a product of inflammation, and yet the case does not require the decided practice that inflammation of the synovial membrane demands.

From time to time I have put some of your hands upon the knee-joint, and bade you notice how little difficulty there is in ascertaining that the fluid is not only in the proper joint, but also under the tendons inserted into the patella. You will find, when there is any considerable accumulation of fluid in the knee-joint, that if you grasp the lower part of the thigh, and compress the great bursa there which communicates with the joint, you will then force up the capsule, raise the patella from the femur, and be able, by tapping upon the patella, to ascertain that it has so risen. This was particularly the case in this young woman.

Will you remember, too, that there is something in the natural structure of the joint that is very apt to deceive you? If a practitioner has forgotten the demonstrations that he had at lecture, he is very apt to conceive that there is a puffy swelling of the knee-joint, when there is nothing more than the natural fat of the joint projecting on each side of the ligaments of the patella. Remember that the interstices between the convexity of the femur and the head of the tibia are filled up with fatty appendages attached to the ligaments, and that these fatty appendages projecting on each side of the ligament of the patella, produce an appearance of puffiness. In order to fix this upon the mind, I will tell you a little circumstance. One of the heads of the profession, whose name is more frequent in your mouths than any other, and most deservedly so, had a very handsome sister-in-law. It happened that a young gentleman fell desperately in love with this young lady, and he took it into his head, that if he could get introduced to the brother-in-law, he might have an opportunity of seeing the young lady, who had taken his fancy in the ball-room. He went to him, being in perfect health, complaining of excessive pain in the knee-joint; and this gentleman, examining the joint, and tapping all around it, said, "Yes, there is puffiness on each side of the ligaments of the patella, and this puffiness being there, and the violent pain described, it is my duty to see that it is immediately attended to. I shall send one of my young gentlemen home with you, and let sixteen leeches be immediately applied." A friend of the suffering gentleman had an opportunity of telling this to the young lady, and she was highly excited and delighted until it came to the *dénoûement*—which was this, that when these leeches were applied, and the bleeding had become very profuse, he got very faint and sick, and never could think of the young lady again. So far he was wrong, and a fool at the end, as he was at the beginning. But you see it is possible, by the complaint of the patient, to be so far led from your just conception of the matter, as to take the natural fulness of the joint for puffiness or effusion.

How is the case of dropsy of the joint to be treated? In the first place, by fomentations with solution of the muriate of ammonia, with mercurial friction, with the ung. hydriod. potassæ, which in the case that has been read seems to have had a happy effect; blisters, alternately on one side and the other, and the blistered surface dressed with blue ointment. These, then, are the external means; but you must remember that the disease arises from a constitutional source: because I do assure you that I have found the complaint almost in every joint—in the shoulder, the wrist, both wrists, both ankles, and both knees. So that there can be no doubt that in these cases it was not a direct influence of injury to the joint that produced the swelling, but a very strong prevailing disposition in the system, which you must endeavour to counteract.

The first object, as I think I must have said before, is to correct the secretions and watch and order the bowels, since, without proper digestion and assimilation, there is neither health nor constitutional strength. There is a fashion at present of giving the blue pill, in doses of two grains, twice a-day. This, with a course of sarsaparilla, proves often the means of correcting the disordered state of constitution. What you see me most partial to in the strumous cases, is the liquor potassæ with bitters, or the carbonate of potash. It was with the idea of this young woman's state of constitution depending on chlorosis, that she had the sulphate of iron and sulphate of quinine in bitter infusion.

There is another practical point. I see it recommended that you should puncture the joint with a fine instrument. Now this appears to me quite out of the question; because the case does not require it. If you put down a bit of lint, dipped in spirituous solution of any kind, on the sides of the joint, filling up the irregularities, and then apply a roller skilfully, in twenty-four hours the fluid will be gone; and, as we say, we ex-

cite the absorbents. Whether we excite the absorbents or prevent the secretion, is practically of little consequence; but it is of consequence that we should be aware of what a puncture of the capsule may produce, and that puncturing it in such a case as this is not at all necessary. There is no difficulty in emptying the joints by the absorbents; the difficulty is to counteract the disposition to its return. When, therefore, the case is cured by puncture, there must be something more than the evacuation of the fluid; an action upon the surface of the synovial membrane must have been induced; and I may be excused for entertaining apprehensions of more violent inflammation arising.

White Swelling.

"Francis Phillips, æt. 15, was admitted May 29th, with a scrofulous knee. Ten years ago he is said to have fallen down; the knee was swelled, and he was an outpatient here for two years. He went out upon crutches, and used them a year and a half: he then lived in the country. At the end of that time he left off crutches, and could run about; the knee, however, still continued swelled, but without pain. Two years ago he fell, and the knee bent under him; in consequence of which he was laid up for six weeks. A year and a half ago he had rubeola and scarlatina; since that time the knee has been occasionally subject to pain, and weaker than formerly. In the spring of this year it got worse, after a long walk; an abscess formed in the ham, and burst. Soon after this, his health became bad, and he was admitted into the hospital. The knee was then considerably enlarged, the surface round, uniform, and white, with blue veins upon the surface, and the limb somewhat bent. Abscesses formed on each side of the patella, which were opened; the openings closed, but have re-opened of themselves several times, after fresh attacks of cold and rigors. The opening in the ham has always continued more or less open from the time of his admission. He has been treated with light tonics, leeches, blisters, issues, &c. He gets a little better, and then a fresh cold throws him back again."

Now as to the name *white swelling*, it is objected to. If you please reject it; but at least understand the meaning of it. It is impossible that you could have gone round the hospital with me this morning without seeing that there are some diseased joints with, and others without, discolouration; and taking up the subject practically, one would at once say, we will arrange these joints in two classes, and call those not at all discoloured *white-swelling*. When the joint is affected externally to the capsule you have the usual character of inflammation. In these several instances, which you have seen of the housemaid's knee, where the outward bursa in front of the patella becomes the seat of inflammation, discolouration attends the swelling; but when there is the more formidable disease of the synovial membrane and cartilage, the scrofulous disease which comes upon these internal parts in the first stage of the disease, there is a very peculiar swelling, one that you must especially notice, and it is without colour, that is to say, the joint is tumid, round, and pale, and as in the case "with some blue veins upon it." You would at once distinguish this by the very term which has been long in use, that is, *white-swelling*, the other affection being attended with discolouration.

You are aware that internal disease everywhere produces the same effect. Suppose a man has disease of the antrum highmorianum, there is a great swelling of the face but no inflammatory discolouration; suppose a man has disease of the frontal sinuses, there is a large swelling but it is colourless; it is a swelling sympathetic with the action within—it is not in itself the seat of disease. Now this is exactly what takes place in the scrofulous disease commencing within the knee-joint; it is a *white swelling*.

What is the history of the case? The white swelling sometimes comes so distinctly and obviously from constitutional influence, that you find no blow, no sprain, nor wound of any kind, and that of course is unfavourable, as it implies that you will have more constitutional peculiarity to encounter in your cure. But on other occasions the disease takes its rise from local injury. I believe there is one case in the book which shows that a strain of the inner lateral ligament of the knee will degenerate into white swelling; and we know that a blow from a stone, which hurts the membrane by bruising it against the surface of the bone, will do the same. There can be no doubt, I conceive, taking the matter up practically, that a white swelling does sometimes begin in the cartilage; but in other cases it forms in the synovial membrane, or in the tendons and apparatus of the joint.

What is the progress of the complaint? Were I lazily inclined, I would say, read the cases in the book, or refer to what you have seen this morning; for in these fifteen cases you have all the features of the disease. However, let us run them over. There is deep-seated pain; this is always very alarming when the constitutional character, struma, prevails. Following this general pain there is swelling, and such as would lead us to believe that there

was an enlargement of the bone. I see it is put down in one of the cases, that the bones are enlarged. I am old enough to recollect when that was the very word used in determining the consulting surgeons as to the propriety of the operation of amputation. They would say, "The bone is enlarged; there is no hope here." Now the fact is, it is another disease altogether in which the bones are enlarged, and when this occurs, it may even give hope of anchylosis and cure. But it is a deception to believe that the bones are enlarged in white-swelling, and it is an appearance peculiar to the disease. The swelling takes place externally to the capsule; the effusion does not escape, on pressure, like œdema, the cells are distended with fluid, and sometimes they give such firmness and resistance, that you would actually believe the heads of the tibia and femur were enlarged one-third of their diameter, whereas when the limb is taken off and the integuments dissected, the bones are not a whit larger than natural.

The next thing that takes place is the contraction of the limb; and I should like to hear some of you explain this occurrence. It certainly marks as distinctly as the index of a clock the degree and progress of the inflammation. This contraction produces a good deal of apparent enlargement, from the new position of the bone: for the projection of the head of the femur adds greatly to the appearance of actual enlargement. This contraction will go on till the head of the tibia is altogether drawn behind the head of the femur; and I have made dissections where this bone was altogether pulled back and dislocated. I cannot at this moment state the reason why this should be, but I know it is most important that you should observe it. If I see a girl complaining of pain with her limb extended, I say the inflammation is external to the capsule; if I see another with her limb drawn up, I say the disease is more formidable and within the capsule. Always remember (and the review of this morning may tell you), that there is a contraction of the joint dependent upon hysterical affection. I have dwelt upon this from time to time, and I therefore now simply notice, that there is pain and contraction which all of a sudden gives way, like the other symptoms of hysteria. So there may be contraction from rheumatic inflammation in the muscles, and inflammation of the tendons and thecæ; but I am speaking here of contraction from diseases of the joint itself.

The next thing that marks a white-swelling, and indeed it is then no longer a white-swelling, is the formation of a succession of abscesses. The violence of the inflammation within produces an abscess in the cellular membrane without, and that abscess in time forms a communication with the joint; for I beg to state, that both here and in the hip-joint, in the early stage, there is no necessary communication between the joint and the abscess. These abscesses forming, and going through their regular processes and discharging, the appearances are more favourable; but then comes on a new accession of pain and fever, and new suppurations form and discharge, and become sinuses, so that a chain of abscesses goes round the whole joint, each successive abscess marked by a paroxysm of pain and inflammation, the regular return of which is one of the peculiarities of true white-swelling. You will observe in the case, that the friends state that he was thrown back by fresh colds. But that which they attribute to cold was the returning paroxysms of fever which attend the disease, and which sometimes attack the patient with surprising regularity. It is this fever which exhausts the patient, and comes to be an important consideration in the question of amputation.

But you naturally say, that the essential point is here omitted; what is doing in all these several cases. If I must mark certain things to be done under the head of cure, I would say, in the first place, the warm douche is advisable when disease of the joint is threatened, such as the frequent pouring of warm salt-water on the limb from a height; after which, let the joint be dried and rubbed well; an anodyne liniment may be used, and a flannel roller applied; a salt-water poultice is sometimes a good application. The next thing is a practice which you have seen to-day, dabbing or spotting with blisters. In this disease leeches are to be applied but sparingly; but when you apply a blister, the excitement will extend further inward than you intend, unless you have preceded or accompanied it with leeches. But what I conceive to be much better is this dabbing it with a small blister, applied in succession to different parts of the surface, a fresh blister being put on every third day, so that the whole surface is kept in a state of excitement, without there being at any one time much violent inflammation produced. Moxa may then be applied, or kali purum, making two very small sloughs to-day and two to-morrow, thus keeping the whole surface by this mode in a state of activity. When the violence of the symptoms is subdued, you have seen the method of dressing; surrounding the joint with slips of lint, spread with the extract of conium, or the emplastrum thuris and mercurial oint-

ment, or the ung. hydriodatis potassæ. Small slips should be put over and over and across every part of the joint, then a bit of oiled silk, plenty of cotton wadding, and over that a roller. When we have got over the violence of the disease, I believe this is a most excellent practice; that is, keeping the limb perfectly still, and attending, at the same time, to the constitutional peculiarities of the patient. As to the general constitutional symptoms, they may be combatted by sponging with warm salt-water or the use of the warm salt-bath. As I said, I much prefer the liq. potassæ, the bark infusion, bark with mineral acids or steel; in a young patient, the vinum ferri, soda, rhubarb, and precipitate of iron, and, lastly, iodine. This practice, generally speaking, is what you will find pursued in the wards at the present moment.

The last point upon which I shall address you, is on the question of amputation in this most formidable disease of the knee-joint. I do think there is too great a disposition to lop off limbs. It is certainly no great credit to the profession that we have recourse to this so frequently and so readily; however, there are cases in which we must do it. When the disease is irritating the general constitution, so that there is continual hectic fever, night-sweats, and wasting or diarrhœa—when, in short, the local irritation becomes so powerful upon the general constitution, that you are in danger of losing your patient, it becomes then a duty to amputate. Even when this is not the case, amputation may be proper, as when the joint is destroyed, the tibia twisted and drawn back from the head of the femur, the thigh and leg wasted: in short, when the whole condition of the limb is such, that if you could say, "To-morrow the disease will terminate," yet that limb would be an incumbrance. Since it would be much more in the way than a wooden leg, why attempt to preserve it at a certain hazard to life? If, then, this be the case, and at the same time the young person is hindered from all education, all hope of providing for himself, and he is teazed and wearied with this continual complaint, although life be not in immediate danger, I conceive that we are bound to recommend the operation. But so long as there is any hope of the limb becoming stiff, and the bones uniting by anchylosis, I do not conceive that we are authorized to give such advice.

The meaning of all this discourse is to entreat you, for your own sakes, to keep a sharp eye on all these cases of disease of the joints. You have no apology for not attending to them; and you must consider it as an expression of my friendly anxiety concerning you, that I take this opportunity of recommending you to do so.

ST. GEORGE'S HOSPITAL.

Hæmorrhage from Necrosis of the Femur—Ligature of the Femoral Artery—Slight Gangrene of the Toes.

Eleanor Daly, about 60 years of age, was admitted January 14th, under the care of Mr. Hawkins. She has had some disease of the thigh for many years, and some abscesses have at present been open about a year, from which small quantities of blood have several times come away. Four days before her admission, however, violent hæmorrhage took place, requiring the use of the tourniquet to control it; this returned to a great extent yesterday, and on her way to the hospital to-day in a cart, notwithstanding the precaution of using the tourniquet, some more blood, though not much, had been lost. By all this she was almost entirely exhausted, and required the constant use of brandy and wine to keep her from sinking.

She was seen by Mr. Hawkins and the other surgeons soon after her admission, when in the state of exhaustion, and they agreed that it would be quite improper to do any thing for her at that time, as the least further loss of blood must necessarily have been fatal. It was a question what should be done for her, if she recovered sufficiently to admit of any operation. There were two or three openings in the thigh from which the bleeding took place, one in the ham, and two others in the inside and front of the thigh, so that it was impossible to tell whether the hæmorrhage took place from small vessels in the inside of an ulcerating and sloughing cavity, or whether the main artery had been opened; and if the latter, it was still very doubtful whether it might be from the femoral artery in the front of the thigh, or from the popliteal artery; and as the opening an extensive cavity in this uncertainty must have been attended with further effusion of blood, it was finally agreed that the femoral artery should be tied,—several cases of the success of this line of practice being related.

About four hours after her admission Mr. Hawkins came again to the hospital, and found her sufficiently sensible and re-

vived to allow him to tie the femoral artery above the abscess.

Jan. 15th.—The stomach has been so irritable that no food has been able to be taken, so that she has required the continuance of stimulants. She appears a little revived, the pulse being just perceptible at the wrist, though very feeble and variable. The foot and leg of proper temperature. She has had no sleep, though she lies tolerably quietly.

16th.—Very restless and delirious last night and to-day. Pulse a little firmer. Sickness and nausea continue, so that a little beef-tea is all the food she has taken since her admission. Slight appearance of mortification about the toes and sole of the foot, with vesication. The openings of the abscess have ulcerated considerably, with profuse thin discharge.

℞ Aect. Morphiæ, gr. ¼; Ext. Conii, gr. iij. M. fiat Pil. 3tiis vel. 4tis horis sumenda.

17th.—Blackness very little extended on the toes to-day, but the warmth both yesterday and to-day is only preserved by hot bottles constantly applied. She lies nearly insensible, and can hardly swallow, small quantities of liquids being frequently put into her mouth, which she can only be made to swallow by stopping the nostrils for some time. Beef-tea enemata are also used. She was quieted by three pills yesterday and one again to-day, when she threatened to be restless.

18th.—No extension of the blackness; and what is dying appears to be only part of the cutis, which is becoming dry. She was quiet last night with one pill, and can swallow voluntarily, and answer questions; the warmth of the foot is also greater.

19th, 5th day.—Blackness a little increased, without swelling. The abscess of the thigh has become very extensively opened by ulceration and sloughing, and is very painful; the opening reaches from the calf to the middle of the thigh, exposing the flexor and gastrocnemii muscles and the popliteal nerve. She seems, however, much better as to her general state, and takes more nourishment.

Applr. Sp. Camph. Pedi.

20th, 6th day.—She is better, taking a little meat and some porter, and requiring less egg and brandy, &c., by which she has hitherto been kept alive; restlessness and pain very great, requiring the morphia pill occasionally; wound made in tying the artery nearly united by the first intention; bowels not open since her admission.

℞ Extr. Coloc. C. gr. viij. statim. Enema commune vespere.

21st.—Repr. Pil. Coloc. C. Bowels open in the evening.

23d, 9th day.—Has improved a good deal in appearance, though still very exsanguine. Yesterday the foot was a little œdematous, to-day less so; no extension of the blackness, which seems to be superficial only. The abscess extending up the thigh, an incision became necessary at the upper part, so that the back of the limb is now open nearly from the calf to the trochanter. The orifices in front, between the sartorius and vastus muscles, hav also enlarged. The discharge is very profuse, and she suffers dreadfully, chiefly from the exposure of the popliteal nerves.

25th.—More irritable, requiring the pills more frequently; countenance more haggard and anxious.

26th (twelfth day).—Hæmorrhage suddenly returned this morning to the amount of several ounces, by which she was much exhausted. The front opening being filled with coagulum, was enlarged, and the coagulum found to come from behind, where the bone was felt dead to some extent at the bottom of the large abscess. Pressure was made in the course of the vessel with bandages, and amputation proposed, if she revived sufficiently to justify the operation, but her friends refused their consent to it.

From this time she continued very restless, and suffered much from the sloughing of the abscesses in the thigh; the discharge from which, however, was not great. The dark parts on the toes and sole of the foot recovered themselves a good deal, so that the portions of the skin which were destroyed by the want of circulation were very small, and confined to the skin at the under part of the toes. She gradually sunk till the 31st, when she died.

On examination after death, the cavity at the back of the thigh was found to be very great, dissecting the muscles and popliteal tibial and fibular nerves; the latter being entirely insulated to some extent from the other parts, and surrounded by weak granulations. The popliteal artery and nerve were covered, on the surface next to the nerve, by similar granulations, and on this side of the artery was seen an oblong ulcer leading into the vessel, involving half the circumference of the tube, and about half an inch long; from which, no doubt, the hæmorrhage had occurred. On tracing the vein, it was found not to be above a third of its usual size, from the division into the tibial branches upwards

to the profunda; a very small part of it, where joined by the saphena, alone remaining of its proper size. The part of the artery on which the ligature had been applied, was closed on both sides by a coagulum, and the ligature was very nearly loose. A considerable part of the back of the femur, where it expands into the condyles, was exposed and dead, and an opening led into the centre of the shaft. The mortification was found to be very slight and superficial; a great part of what had been dark having recovered its proper colour and circulation before her death. Viscera healthy.

WESTMINSTER HOSPITAL.

Dropsy from Diseased Kidneys.

James Willis, æt. 19, was admitted into King William's ward, under Dr. Roe, January 14th, 1835, with anasarcous swelling of the whole body; the œdema extending from the ankles to the thighs and scrotum. The abdomen was lax, but fluctuated; the wrist, arms, as well as the face and palpebræ, partook of the general anasarca; the skin was pale, even to exsanguinity, and the extremities had a peculiar marbled or mottled appearance; countenance strikingly phlegmatic; pulse 80, small, and compressible; tongue dry, inclined to brown; bowels regular, without the use of opening medicine; urine scanty, not more than a pint in the twenty-four hours, and of a white milky appearance, but often varying in colour and quality, abundantly coagulating by heat; respiration 30; dyspnœa on very slight exertion; slight evidence of the râle crepitant humide; heart's action perfectly normal; appetite unimpaired, but craves constantly for drink. The patient's illness is of not more than five weeks' standing; he was previously in very good health, and was generally accounted a healthy lad. The patient cannot refer his symptoms to any particular cause, as they came on gradually, first by œdema of the feet and ankles, attended by diminution and altered quality of his urine. Is a shoemaker by trade, and possesses a character for remarkably temperate habits. Has been an out-patient of this hospital for the last three weeks, and has been twice bled to the extent of ℥vj. each venæsectio, with apparent relief to the dropsical symptoms. He was ordered at the same time to take the compound pill of calomel, digitalis, and squill. The symptoms have, however, now become so aggravated, that Dr. Roe considered him a fit object to be admitted as an in patient. He was ordered

Fish diet, and Pil. Hyd. c. Pulvere Scillæ et Digitalis. Capiat unam quartis horis et ad libitum Potassæ Supertart. bibendum.

Jan. 17th.—Ptyalism has been induced by the pills; urine had not increased in quantity till last night,—about three pints were passed in the twelve hours: it is of an orange-brown colour; coagulates copiously by heat. ℥iij. of the urine contained 18·25 grains of dry albuminous matter. Tongue clean; pulse small.

Omittantur Pilulæ et utatur gargarism. Aluminis, p. n.

19th.—Nearly a pint and a half of saliva is secreted from the mouth in the twenty-four hours; urine about four pints in the same period; œdema of the legs somewhat less; face still continues puffed; urine much clearer and lighter coloured; sleeps well, and can lie equally on either side; maintains without difficulty the recumbent position.

Capt. Potassæ Carb. in statu effervescentiæ c. Acido Acetico dil. et Tinct. Scillæ, ℥ss. pro dosi quarta quaque hora. Omittatur Potus Potassæ Supertart.

22d.—His urine has increased to near six pints in the twenty-four hours; anasarca much diminished; hæmorrhage from the mucous surface of the mouth; craving; thirst; appetite continues good; bowels regular.

24th.—Urine still continues to increase; anasarca generally subsiding.

Cont. Mist. Efferves. Superbibet Decoct. Spartii Scopar.

26th.—Is much improved in general health; limbs the natural size; urine clearer; appetite good. Feet and ankles swell towards night.

27th.—Has not felt so well the last twelve hours. Urine has become scanty, and deposits much animal matter on cooling. Fluid is rapidly mounting from the ankles upwards; tongue dry and brown, but not coated; pulse 80, small. Some degree of dyspnœa is induced in the recumbent position.

Decoctum Uvæ ursi, Oj. quotidie bibendum.

31st.—Anasarca continues to increase; orthopnœa. Succussion affords obscure evidence of fluid in the thorax. The uva ursi has caused so much pain in the sto-

mach, that it was discontinued. Complains this morning, for the first time, of dull heavy pain in the loins.

Repetatur Haustus Effervescens.

Feb. 4th.—Anasarca partially subsiding; orthopnœa has diminished, and he can lie down in bed; sleeps well; bowels continue regular; appetite unimpaired. His diet has more than once been changed from fish to rice pudding, &c. An examination was this day completed of the relative quantity of dry solid albuminous matter contained in three ounces of urine passed while an out-patient, and that voided on the 27th January. The former contained 18·25 grains, the latter 19·50 grains of animal matter. The hospital does not afford the means of ascertaining the specific gravity of fluids. The patient continued in much the same state to the

11th, when the anasarca again returned; the face became much puffed, and palpebræ quite closed; respiration hurried and difficult; urgent dyspnœa; percussion affords evidence of fluid in the chest; stethoscopic symptoms; râle crepitans humide; indistinct murmur at the inferior regions of the thorax; urine not more than one pint daily, depositing much animal matter on cooling.

Pil. Hyd. Sub. c. Scilla sine Digitale.

14th.—Œdema of the face increased; vision obliterated; respiratory murmur indistinct at the lower regions of the thorax; râle crepitans humide very evident in the mammary region of both sides.

10 P.M.—Breathing has become still more urgent; respiration husky and stertorous; frequent sense of suffocation; tongue dry; a blackish stain on the dorsum; pulse scarcely perceptible, from the œdema of the wrists; the cuticle of the legs and thighs is perfectly glaring, from over distention; urine about three pints. Can only exist in the upright position in a chair. A vein was opened, but only an ounce could be obtained.

Appl. Empl. Lyttæ cruribus.

15th.—The blisters have risen well, and many pints of fluid have drained away; respiration more free from anxiety; face not so much puffed; can return to his bed; suffers much from cough, returning in severe paroxysms.

Spiritus Æth. Nitrici, 3j. p. r. n.

Heart's action laboured, about 118 beats per minute.

16th.—Passed a very restless night; respiration continues stertorous and husky; countenance sunken. The effort of speaking is too much for his respiratory powers. He continued in this state till 12 o'clock at noon, when he died.

Sectio cadaveris, 24 hours after death.—The whole surface of the body was anasarcous, and the cellular tissue of the surface perfectly infiltrated. About four pints of a dark, clear, brown fluid, were found in the cavity of the thorax. The lungs were partially œdematous, and gorged in places with blood. One or two detached tubercles were observed. The pleura had contracted no adhesions. The abdomen contained about six pints of fluid. The liver was much enlarged, and when cut into, presented a granular majusticated appearance. The kidneys were externally pale, much enlarged, somewhat more lobulated than natural, and not at all differing from each other in morbid appearance. On a section being made, the structure of the organ was well shewn; the cortical part was pale and much indurated. The tubuli presented their accustomed fasciculated projections, but around them an interstitial deposit of a white granular cartilaginous substance had taken place, appearing to be lost in, or continuous with the cortical portion, and dipping down and surrounding the calyces, so as to give the morbid structure a convoluted appearance. There was more than a usual quantity of fat about the infundibula and pelvis of this organ. The bladder and ureters were healthy. No morbid appearances could be detected elsewhere.

This, I think, must be considered a case of dropsy arising from that abnormal condition of the kidney pointed out by Dr. Bright. It must be observed, in the foregoing report, that the patient has but once (although frequently inquired for) complained of that pain referred to the loins, and accompanied by a cutting sensation passing across the abdomen, which Dr. Bright has considered as pathognomonic of that degeneration of the renal organs, to which he called the attention of the profession. Notwithstanding the absence of a symptom so prominent in most of the recorded cases of this disease, the post-mortem appearances of the kidneys can leave no doubt as to the nature of the affection. An additional testimony is also afforded of the unfavourable nature of our prognosis, and the utter hopelessness of remedies in this universally fatal disease.

ADVANTAGE OF THE EARLY EMPLOYMENT OF THE CATHETER, IN CASES OF RETENTION OF URINE.

To the Editor of the Medical Gazette.

Sir,

Reading in one of your late publications of camphor and ammonia as a cure for retention of urine, I beg leave to offer to the consideration of your surgical readers a different practice to that which is generally employed in these cases. I mean, that in all cases of retention of urine, except in those in which some mechanical obstruction is known to exist (as permanent stricture), it is far better to use the catheter immediately, than to try a number of different supposed remedies. These very frequently fail, as I have formerly experienced; and by the time they occupy, not only suffer the bladder to be more distended, but add very greatly to the agony of the patient, and increase the local and constitutional irritation. In fact, they place him in a much more unfavourable condition for the introduction of the catheter than he was some hours before.

There is another very great advantage derived from the early use of the catheter; it is seldom necessary to repeat it above once or twice; whereas, when the complaint is suffered to continue for forty-eight hours, or longer, it requires many weeks, or months, for the bladder to recover its healthy action.

In the course of a rather extensive practice, I have for some years followed this plan, and almost universally with success. I have now a gentleman for whom it is necessary to introduce the catheter daily, and has been for more than a year, in which case the catheter was not introduced till the very last extremity, in consequence of a former surgeon having declared, from certain circumstances, that it was impossible to introduce it.

If the catheter cannot be introduced without producing hæmorrhage and great pain, bleeding and other means must necessarily be instituted before the attempt is persevered in. I always use a large catheter.—I am, sir,

Your obedient servant,

W. Hill.

Wotton-under-Edge,
March 18, 1835.

LITERARY INTELLIGENCE.

In the press, Martinet's Manual of Pathology. Edited by Jones Quain, M.D., Professor of Anatomy and Physiology in the University of London. A New Edition, with numerous Additions.

NEW MEDICAL WORKS.

Elements of Materia Medica and Therapeutics. By Dr. A. T. Thomson. Second Edition. 1 vol. 8vo. 21s. bds.

Sketch of the History of Medicine. By Dr. J. Bostock. 8vo. 7s. 6d. bds.

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

March 19, 1835.

Robert George Higgins, Neport, Salop.
George Augustus Place, Hampceston, Dorsetsh.
William Whitcombe, Cleobury Mortimer.
Henry Richard Gawin Tripe, Plymouth.
William Mackie, Oundle.

WEEKLY ACCOUNT OF BURIALS,

From Bills of Mortality, *March* 17, 1835.

Abscess	4	Hooping Cough	16
Age and Debility	57	Inflammation	35
Apoplexy	7	Bowels & Stomach	9
Asthma	17	Brain	3
Childbirth	2	Lungs and Pleura	6
Consumption	64	Liver, diseased	5
Convulsions	33	Measles	6
Croup	5	Miscarriage	1
Dentition or Teething	6	Mortification	4
Dropsy	18	Paralysis	5
Dropsy on the Brain	17	Small-Pox	13
Epilepsy	1	Sore Throat and Quinsey	1
Erysipelas	2	Thrush	1
Fever	5	Tumor	1
Fever, Scarlet	8	Unknown Causes	5
Gout	2		
Hæmorrhage	1	Stillborn	25
Heart, diseased	1		

Increase of Burials, as compared with the preceding week . . . 68

METEOROLOGICAL JOURNAL.

Kept at Edmonton, *Latitude* 51° 37′ 32″ *N. Longitude* 0° 3′ 51″ W. *of Greenwich.*

March, 1835.	Thermometer.	Barometer.
Thursday . 12	from 43 to 54	29·71 to 29·74
Friday . . 13	40 54	29·60 29·48
Saturday . 14	39 48	29·35 29·26
Sunday . . 15	37 48	29·20 29·24
Monday . . 16	35 50	29·76 29·98
Tuesday . . 17	40 49	29·86 29·73
Wednesday 18	39 49	29·83 29·99

Wind variable, S.W. prevailing.
Generally cloudy, with frequent rain.
Rain fallen, 1 inch and ·2 of an inch.

Charles Henry Adams.

Wilson & Son, Printers, 57, Skinner-St. London.

THE

LONDON MEDICAL GAZETTE,

BEING A

WEEKLY JOURNAL

OF

Medicine and the Collateral Sciences.

SATURDAY, MARCH 28, 1835.

LECTURES

ON THE

DISEASES OF THE CHEST,

In the course of which the Practice of

PERCUSSION AND AUSCULTATION

IS FULLY EXPLAINED,

Delivered at the London Hospital,

By Thos. Davies, M.D.

Lecture XXVI.

NERVOUS DISORDERS OF THE HEART AND ARTERIES.

By nervous affections of the heart and arteries, we mean the affections of those organs which do not depend upon organic changes of their structure. The symptoms of these disorders are not of permanent duration, and they appear at indeterminate periods. We shall describe them in the following order:—

1. Angina pectoris, or neuralgia of the heart.
2. Nervous palpitations.
3. Spasm of the heart, with bruit de soufflet and fremissement cataire.
4. Nervous affections of the arteries.

ANGINA PECTORIS.

This disease usually commences with a sensation of pain, oppression, weight, or constriction, at the cardiac region. In severe cases, the patient feels as if the heart were violently squeezed; and he then supports himself by firmly embracing any fixed object; at the same time he retains his breath, for the purpose of relieving himself from this sensation. As the fit continues, the dyspnœa is often extreme; sanguineous congestions are formed towards the head and face; occasionally syncope or convulsions supervene, and the patient manifests the most unceasing jactitation and apprehension of imminent suffocation. I have seen instances of sudden death occurring in the midst of the most agonizing distress. The access, after lasting for an uncertain time, usually ceases, to recur at an indeterminate interval. Certain circumstances often invariably bring it on in the same individual at any period. Thus, if he endeavours to walk a little quicker than usual, or ascends an inclined plane, the sense of obstruction, or weight, or squeezing, and the dyspnœa, immediately come on, and he is obliged to rest a few moments, and these feelings then generally suddenly disappear. Emotions of the mind will also occasionally reproduce the same symptoms.

Previous to and during the access, a painful numbness is felt in the inside of the left arm; it is rarely experienced in both arms, or on the whole of the left side of the body; and more rarely still in the right arm only, or in the four extremities. This sensation is usually felt along the inside of the left arm, from the axilla to the elbow; sometimes it continues in the course of the ulnar nerve to the little finger, and to the ulnar side of the ring finger. These pains often follow, also, the course of the left anterior thoracic nerves, and are therefore felt upon the left anterior parietes of the chest; they vary not only in situation but also in character; occasionally there is a sensation of mere numbness without pain; sometimes the pain and numbness are combined. The increase of the sensibility of the skin and mammæ is often so great that the slightest pressure is excessively painful. I have met with patients whose torments have been so great, that they described their flesh to feel as if torn by the talons of an animal. These signs finally disappear for a time, leaving only a slight numbness or uneasiness of the parietes of the chest and of the inside of the left arm.

I have often observed, that these neuralgic sensations attacking the parietes of

the chest occurred alone, especially in a slight degree, without any feeling of obstruction, weight, or squeezing in the region of the heart; the anterior thoracic nerves being then only the seat of the neuralgia. Sometimes the cardiac symptoms are present, unaccompanied by any pain on the surface of the chest or in the arm. When the junction of both sets of symptoms obtains, then the *angina pectoris* may be said to be completely formed.

Angina pectoris, in a moderate degree, is by no means an uncommon affection; but the disease, in its most violent form, is very rare. In ten years, I have seen but two instances of death occurring during the violence of the paroxysm.

When the anterior parietes of the chest and the arm are affected, there can be no doubt that the disease depends upon some peculiar condition of the nerves supplying these parts,—a condition similar to that which occurs in the fascial nerve in tic douloureux, and to which the term neuralgia has been applied,—an expression simply denoting the fact of pain or aching of the nerves, without implying any notion of their specific lesion. But when the heart is also affected, various opinions have been entertained as to the cause of the symptoms.

Heberden and Parry, Bertin and Kreysig, believed the disease to depend upon ossification of the coronary arteries. The Germans and Italians are of opinion that it is consequent upon some organic disease of the heart; but the only means by which such questions can be decided—the scalpel—has distinctly shewn, that although angina pectoris may coincide with every organic change of the structure of the heart, yet that it exists often also independently of any apparent lesion of that organ. The cause of the disease must therefore be referred to some inexplicable state of innervation. It is probable that when the cardiac symptoms exist alone, that the disease depends upon a lesion of the eighth pair of nerves, and of the filaments sent to the heart by the great sympathetic. When the anterior parietes of the chest and the inside of the arm are only affected, the anterior thoracic, the internal cutaneous, and the ulnar nerves, are the seat of the disorder; and finally, in those cases when the heart, lungs, surface of the chest, and inner side of the arm, are thus affected, then these combined disorders are the result of a simultaneous neuralgic state of all the nerves supplying these parts.

Treatment of angina pectoris. — Angina often affects individuals in whom the digestive functions are in a state of derangement. It is necessary, in such cases, to pay great attention to the stomach and bowels, obviating accumulations by gentle emetics and purgatives, correcting acrid secretions by antacids—as the soda, and chalk, and magnesia—and giving tone by the employment of tonics, as iron, quinine, &c., combined with carminatives.

When the attack has arrived, the patient should be placed in a state of repose,—at least as much as his irritability permits; for sometimes his extreme distress forces him to quick movements or violent strainings, which no effort of volition can control. Bleeding, at this moment, has been recommended, if the patient be plethoric; but it is a remedy of suspicious value in most cases. Opium, the diffusible stimuli,—as æther, camphor, &c.—the fœtid gases,—as assafœtida, are often highly advantageous during the access.

During all periods of this disease, I have long been in the habit of employing the belladonna to the surface of the chest, and generally with excellent effect, especially if the angina be not complicated with organic lesions of the heart; although even then it affords temporary relief. I prescribe a plaister, of the size of the hand, formed of one part of extract of belladonna, mixed with four parts of soap plaister, and place it upon the region of the heart. I once had an opportunity of seeing the full effects of this medicament in a most unexpected manner.

I was requested, about three years since, to see a gentleman who had just arrived in London from Dublin: I found him labouring under a severe form of angina pectoris,—so severe, that he could bear no movement whatever, except upon the water, without its producing a violent access; he had therefore lodged himself in a street close to the Thames, for the purpose of readily obtaining the only exercise he could enjoy. Upon a most careful examination of his heart, I could find no organic disease, nor could an eminent physician, Dr. Billing, who is a practised auscultator. The usual belladonna plaister was applied to the chest of the patient about the middle of the day; towards evening alarming symptoms arose: he became slightly amaurotic, his head was confused and giddy, and he articulated his words with great difficulty. The plaister was immediately taken off, and the surface of the skin beneath it was found covered by ulcerations of various sizes, produced by the action of the tartar emetic ointment; a circumstance which of course we had been totally unacquainted with. He recovered the integrity of his functions in a few hours, but the symptoms of angina had totally disappeared. The patient returned home in the mail coach, the movement of which, for a long time before, he could not have borne, and from that time

he has remained perfectly free from his disease.

Laennec had great confidence in the magnet in angina pectoris. He applied a plate of steel, of a line in thickness, and strongly magnetized, upon the left precordial region, and a similar one exactly opposite, on the back, so that their poles were opposed to each other, and the magnetic current traversed the parts affected. He frequently applied a blister under the anterior plate. I have tried this plan, and have thought with good effect.

Blisters, tepid shower-baths, and change of air, are often of utility also in this affection.

Nervous palpitations of the Heart.

Purely nervous palpitations of the heart are often more distressing than those which arise from organic causes, for, instead of diminishing by repose, they are often aggravated by it. They usually commence at the beginning of the night, and the patient, for many hours, obtains no sleep. A moderate exercise often diminishes these palpitations, or at least distracts the attention from them.

Palpitations consist in the beatings of the heart being sensible to the patient; the impulsion, noise, and frequence of the pulsations of the organ are then increased; a sensation of internal agitation, particularly in the head and abdomen, is consequent upon this state. The urine is generally clear and limpid during the access. The duration of these palpitations varies; when they arise from a sudden emotion, they may pass off immediately: in young, plethoric, nervous persons, they may last for years, with but little intermission.

It has been supposed that purely nervous palpitations must ultimately induce hypertrophy, or hypertrophy with dilatation of the heart: this fact, although probable, has not yet been proved.

Nervous palpitations differ from those produced by hypertrophy, or hypertrophy and dilatation of the heart, inasmuch as in the former the application of the stethoscope shews that the organ is not really of considerable size, the noise of the pulsations is not heard to a great extent upon the surface of the chest, and, above all, the shocks communicated by them have but little impulsion, for they never sensibly move the head of the observer. Sanguine congestions rarely form, except in old persons.

These palpitations are very frequently found in hypochondriacs and hysterical women. Their treatment merges into that recommended for these diseases. Warm or cold baths, according to the season, may be used. Digitalis, combined with antispasmodics and tonics, I have often seen produce advantageous effects. The hydrocyanic acid has been also employed with some success. Bleeding is rarely beneficial, but is often hurtful in nervous persons, except they be plethoric. A change of air, combined with constant pleasing occupations, are perhaps the most useful means of combatting this disease.

Spasm of the heart, accompanied by bruit de soufflet and fremissement cataire.—The bruit de soufflet of the heart, although frequently connected with organic lesions of the organ, may exist independently of them. It then depends upon some peculiar state of innervation. This sound is found particularly in hypochondriacs of sanguine and nervous constitutions. Frequently it is present in some artery at the same time. Often the bruit alternates from the artery to the heart, and from the heart to the artery. It is sometimes continued, occasionally intermittent; in the latter case it is produced by the slightest mental emotion: even coughing, or breathing deeply, may be sufficient to cause it. The symptoms are usually serious in proportion to the intensity of the sound, to its duration, and to its extent in the heart and arteries. When the bruit is marked, and continued in the heart only, there is always more or less dyspnœa and general weakness: these symptoms are aggravated if the fremissement cataire be present also. There is usually but little nervous agitation, especially if the patient be in a state of repose; but in walking quickly, dyspnœa is soon produced, and, in severe cases, the head becomes affected by exercise as well as the lungs.

Nervous affections of the arteries.—These disorders may be considered in three points of view:—1st, arterial neuralgia; 2dly, augmentation of arterial impulse; 3dly, spasm of arteries, with bruit de soufflet and fremissement cataire.

1. *Neuralgia of the arteries.*—Pains, more or less violent, continued or intermittent, sometimes follow the course of the arteries, and appear to be seated in the nervous network furnished by the ganglionic system surrounding these vessels. These pains are commonly found in hypochondriacs and hysterical women. The treatment recommended for angina may be employed here. A blister applied over the affected artery is very often efficacious.

2. *Augmentation of arterial impulsion.*—It occasionally happens that the pulsations of one of the carotids, temporal or radial arteries, are stronger than those of the other. In many persons in health there is a perceptible difference, the right pulse being stronger than the left. Sometimes the radial arteries will pulsate alternately, with a different force.

The abdominal artery is often the seat of this augmented impulsion: the vessel

then always appears increased in its fulness also.

When the impulsion exists only in a small or middle-sized artery, it scarcely affects the general health, except it occurs in consequence of inflammation of the parts which that artery supplies: thus, when the hand or fingers become inflamed, the digital, radial, or cubital, or even the brachial artery, beat more stongly than those of the opposite or healthy side. Anormal pulsations of the carotids often accompany nervous affections, but are not always present in persons menaced with apoplexy.

Nervous palpitations are sometimes combined with increased impulsion of the arteries of the whole body: the beatings of these vessels are then universally felt, and very small arterial branches often become perfectly visible under these circumstances.

These palpitations, when they affect the aorta, or any portion of it, always produce sensations which are more or less painful. When the ascending aorta is thus disordered, it causes a certain degree of dyspnœa, anxiety, and disposition to syncope; its beatings are heard above the middle part of the sternum, stronger and more noisy than at the heart itself. If the descending aorta be the seat of the palpitations, the symptoms are nearly the same: the pulsations can then also be heard with greater distinctness on the back, and particularly on the left side, near the vertebræ, than in the precordial region.

Nervous palpitations are more commonly found in the abdominal aorta than in the rest of the course of that vessel. Gaseous accumulations, forming tumors, often arise over the artery, and, as the pulsations are communicated through them, they frequently simulate aneurisms; but these swellings and pulsations rarely remain above a few days, and upon examination with the stethoscope the impulse is never strong, bounding, and extensive, like that of aneurism. The pulsations also are confined to the natural caliber of the artery.

Spasm of the arteries, combined with bruit de soufflet.—When the bruit de soufflet exists in a moderate-sized artery, and is found in only a small part of its course, and particularly if it be intermittent, it is usually accompanied by slight nervous agitation and an acceleration of the pulse. This state is especially found in young hypochondriacs of sanguine or sanguine-lymphatic temperaments, under the slightest exercise or mental emotion. The bruit is usually distinguishable in the subclavian arteries—more rarely in the carotids—more frequently on the right side than on the left. It commonly occurs in persons attacked by disease of the heart, or nervous palpitations.

When the bellows-sound is situated in the aorta, and particularly in its abdominal portion, there is great anxiety, and a tendency to lypothymia, from the slightest causes: the pulse is then always quickened.

When the two carotids are affected, especially if the fremissement cataire be felt also, the same symptoms obtain, although in a less degree. When the sound exists at once in the heart, the aorta, the carotids, subclavians, brachial and femoral arteries, the anxiety of the patient becomes extreme, the respiration is oppressed, the pulse is frequent, and sometimes he experiences the sensation of great internal heat, although the skin, &c. indicates no sign of fever. This state is attended with considerable danger, and death may even be the consequence.

If the bruit de soufflet be very intense in a number of arteries at once, the fremissement cataire is usually perceptible in some of them; the latter phenomenon is not, however, always found to be in proportion to the intensity of the bellows-sound, nor to its extent, for it sometimes occurs in one of the carotids when the bruit is very feeble.

In many cases where the bruit de soufflet is tolerably evident in the arteries, the pulse of the radial arteries produces a trembling or trilling vibration, similar to that which a tight metallic string, slightly struck, would give to the end of the finger. This is probably but a minor degree of the fremissement cataire, yet it is often found where the bruit de soufflet is present in some arteries, and the fremissement cataire in none. It is sometimes also present when there is neither the bellows-sound nor fremissement cataire; but then the former sound can often be produced by making the patient walk gently, or inspire or cough forcibly.

This trembling, or trilling vibration, can often be produced by a certain degree of pressure upon the artery with the finger; it is then sometimes felt for a moment, and then lost. If the pressure be increased, it instantly re-appears, but it is extremely difficult to seize and continue the precise degree of compression necessary to render the sensation, under these circumstances, permanent, or to produce it at will.

The bellows-sound may exist in the highest degree with or without the fremissement cataire, either in the heart or arteries, without any increase of their impulsion. When these circumstances are united, the above-described symptoms become infinitely more marked.

Treatment of neuralgia of the arteries.—When the arterial impulsion is greatly increased, bleeding is indicated; and it is often by that means alone, frequently repeated, that any relief can be obtained;

but abstraction of blood should be very cautiously effected if the bruit de soufflet exist without impulsion. Tepid warm and shower baths, of that degree of temperature that the patient may feel ultimately a slight sensation of cold, are commonly very useful. Laennec asserts that he has occasionally found success by the use of the magnet, when the bruit existed only in the heart and aorta. If the bruit de soufflet is found without increased impulsion in pale and cachectic subjects, then iron, the fœtid gums, and tonics, often produce good effects. A moderate diet, and abstinence from all kinds of stimulus, should be recommended.

Displacements of the Heart.

The heart is retained in its natural position by the diaphragm, the mediastinum, and the habitual plenitude of the chest; but the following circumstances may force it to deviate in various directions:—

The organ may be thrown to the right side by effusion of fluid or air, or by large tumors placed in the left pleuritic cavity.

It may deviate from its position farther to the left side, by the above causes operating from the right pleuritic cavity.

It may be forced *upwards* by aneurisms of the abdominal aorta, by tumors, and by ascites.

It may be forced *downwards* by the compression of an aneurism of the ascending aorta, or its arch, or by any other voluminous tumor situated above it. The heart, also, has been seen in this situation without any obvious cause; this is the *prolapsus cordis* of the older authors.

Malconformation of the Heart and great Blood-vessels.

A circumstance essentially necessary to the healthy state of the circulation is, that the blood should have free access to the lung during a portion of its course round the system. If, by any derangement or alteration of the heart or its vessels, that fluid is prevented from entering into the pulmonary organs, death is the immediate result. The case of malconformation I shall first speak of, is that in which there is no communication whatever between the heart and lungs. It is what is called a single heart, and its parts are arranged in the following manner:—

The two venæ cavæ enter into the auricle in the usual way; the auricle communicates with a ventricle, from which the aorta arises; there is but one auricle and one ventricle, an aorta, but no pulmonary artery or veins. The blood, therefore, in this case, can never be renovated by the contact of the atmospheric air; it is therefore venous in the systems of the arteries and veins, and the subject can live but a very short time after birth.

It is necessary also, for the healthy state of the circulation, that the arterial and venous bloods should be kept separate and distinct from each other; thus it is that they flow in different sets of vessels, the arteries and veins; thus it is they are prevented from intermingling in the heart itself, by the septa of the auricles and ventricles. If by any alteration of the structure of the vessels, or of the heart, these two fluids can intermix, then disorder will be the result. If the mixture occur from a lesion of the arteries and veins, the affection is generally local, and but of little consequence; if it occur in the heart, it always occasions, sooner or later, a fatal result.

A vein and artery are sometimes seen to communicate, so that the blood flows directly from one into the other. This constitutes a varicose aneurism; but the disease is confined to the lesed parts only; the quantity of blood intermingling is insufficient to disturb the general circulation. Occasionally the smaller arteries and veins open and communicate with each other, as in certain *nævi;* but the consequences here again are only local, the system remains undisturbed.

But when the admixture of arterial and venous blood takes place in the central organ of the circulation, then the most serious results occur, in consequence of the quantity of these different fluids which become mixed, and by which union each of them is deteriorated, and unfitted for the specific functions which it has to perform. All the malconformations I have to describe have for their consequence the mixture of the arterial and venous bloods in greater or less proportion, as well as the difficulty of transmission to the pulmonary organs.

Malconformation of the heart may be divided into two classes—1. *single hearts;* 2. *imperfect double hearts.*

1. *Single hearts.*—The following is the usual structure of a single heart:—The two venæ cavæ and the four pulmonary veins enter into an auricle; the auricle opens into a ventricle, from which arises an aorta; the aorta soon gives off two pulmonary arteries, which proceed to the lungs, and then the vessel continues in its usual course.

In this case there is a perfect mixture of the arterial and venous bloods. The black blood passes into the auricles from the two cavæ, and mixes with the red blood flowing from the four pulmonary veins into the same auricle; the united fluids are propelled into the single ventricle; the aorta then receives them, and transmits these fluids all over the arterial system, and to the lungs also, by the two pulmonary arteries arising from it.

Two or three modifications of this form of single heart have been observed, but they are but slight. Thus, in the above case, two pulmonary arteries arise from the aorta; sometimes, however, there is only one, which afterwards divides into two branches; and occasionally the aorta and pulmonary artery originate in the single ventricle by a common trunk.

2. *Imperfect double hearts.*—These imperfections consist in the incompleteness of the septum of the auricles, or of the ventricles. In either case the arterial and venous blood must intermix.

Species 1: *Imperfect septum of auricles.*—The foramen ovale is often found a little open; but from the equal pressure of the fluids in the two auricles, and from the slightness and obliquity of the opening, rarely any intermingling takes place. I shall state the following case of a patescent foramen ovale, which I believe to be unique; at least, I know of no such case on record.

I was requested to see a young man of about 18 years of age. I found him labouring under the most severe dyspnœa; his face, body, and limbs, were œdematous, cold, and of a dark slaty purple tint; the beatings of the heart were strongly impulsive, and extended over the greater part of the parietes of the chest; the lungs were infiltrated with serum; the "rhoncus crepitans" was distinct; his expectoration was pituitous, and often tinged with blood. Upon inquiring into his history, I was told that up to the age of twelve years he enjoyed the most perfect health; that at that period, on using violent exertion at cricket, his breathing suddenly became very difficult, and he coughed up a large quantity of blood. He had gradually become worse up to the time I saw him; he had suffered therefore during a period of about six years from the original attack. He lived but a very short time longer. On a post-mortem examination, the heart was found large and hypertrophied; the edges of the foramen ovale were smooth, and so widely opened that the thumb could easily pass through, as you perceive in this preparation [shewing it.]

The violent exercise which this lad had made at the age of twelve years, must have caused the rupture of the partition between the auricles, and admitted the passage of the blood from one to the other: the disease could not have been congenital, for the individual was in perfect health for so many years after his birth.

The next case of imperfect auricular septum is more complex, at least in the explanation of the alteration of the current of the circulation through the heart. It consists in the foramen ovale not only being open, but the ductus arteriosus also. Under these circumstances the blood must have passed in the following way. A large proportion, let us say half of the blood, was transmitted into the right ventricle, and from thence into the pulmonary artery into the lungs: a diminished quantity was therefore sent into the latter organs, and we shall see how a compensation was afforded. The other half of the auricular blood traversed the foramen ovale into the left auricle, by which the quantity of blood was there preternaturally increased; the mixed bloods then passed into the left ventricle and into the aorta; and as the ductus arteriosus was open, the superfluous proportion of mingled aortic blood was sent through it into the pulmonary artery, by which the deficiency was made up of that transmitted into the latter vessel by the right ventricle. A consequence of this state of things is as follows:—if there be a due relation between the diameter of the open foramen ovale and the caliber of the ductus arteriosus, so that a sufficient supply of blood be conveyed to the lungs, life may be sustained for a considerable period.

I present you a preparation of a singular malconformation in which the foramen ovale is open, the pulmonary artery impervious at its origin only, and the ductus arteriosus widely patescent: the right ventricle is so completely in a state of concentric hypertrophy, that its cavity would scarcely contain a small pea.

In this case the whole of the venous blood must have passed from the right auricle into the left, and the mixed fluids from thence into the aorta. The circulation then divided into two currents; the one through the ductus arteriosus into the open part of the pulmonary artery, the other continued its course along the aorta. You will notice that the blood which had been transmitted through the ductus arteriosus in this case flows in a different direction to that which occurs in the fœtal circulation; for in this malconformation the current must have been from the aorta into the ductus arteriosus. In the fœtus, its course is from the pulmonary artery into the aorta.

Species 2: Imperfect septum of ventricles.—A malconformation of this species has been observed in which a trunk common to both the aorta and pulmonary arteries arose from both ventricles, in consequence of the septum being incomplete at its upper part. The aorta formed a sudden curve, and descended to supply the body and lower extremities only. A second aorta proceeded from its ordinary situation, ascended and formed its curve, giving off the innominata, the left subclavian, and carotid arteries; then becoming impervious, and terminating in the

form of a ligament in the parietes of the thoracic portion of the descending aorta previously described. In this case the septum of the ventricles being imperfect, the arterial and venous bloods must have passed into both the aorta and pulmonary artery.

The septum of the ventricles is sometimes imperfect in its centre, so that a round and smooth orifice of communication has existed between the two cavities.

The preparation I hold in my hand beautifully shews a singular transposition of the vessels and cavities of the heart. The two cavæ, you perceive, enter into the right auricle as usual; the foramen ovale and the ductus arteriosus are widely open; the aorta arises from the *right* ventricle, whose parietes are as thick as those of the left generally are; the pulmonary artery arises from the *left* ventricle, the walls of which cavity are thin, and similar to the ordinary state of the right ventricle: so that in this case the blood contained in the right auricle must have divided into two currents, one of which passed into the right ventricle, and from thence into the aorta; the second into the left auricle, ventricle, and pulmonary artery. When arrived at the latter vessel, that fluid again divided into two parts; one proceeded to the lungs, the other through the ductus arteriosus into the aorta; by which a compensation was affected for the diminished quantity of blood sent into the latter vessel by the right ventricle.

The symptoms of these malconformations consist in violent palpitations, irregular pulse, dyspnœa occurring in paroxysms, panting, coughing, screaming. Serous effusions and hæmorrhages frequently take place. The cerebral functions become disturbed; torpor, coma, convulsions, or paralysis, may supervene. The digestive functions become also disturbed, and the little patients finally arrive at a state of extreme marasmus. To these symptoms are frequently superadded an appearance of blueness or lividity over the body, and a general coldness over its whole surface.

The theory of this unusual coldness and livid colour of the body, is as follows.—When two substances enter into chemical combination, the specific heat of the resulting compound is different from that of the constituents. The respiratory and circulatory movements bring together two fluids, air and venous blood, each containing a certain quantity of specific heat. By the chemical action of these fluids upon each other, two compounds result, carbonic acid and arterial blood; the first having less specific heat than air, the second more than venous blood,—the sum of their specific heats being less than that of the air and of the venous blood. A portion of this heat becomes sensible, and is expended partly on the air, partly in the lungs themselves, and partly in raising the sensible heat of the arterial beyond the venous blood. When the arterial is converted into venous blood in the capillaries, a portion of its specific heat is also evolved, becomes sensible, and gives rise to what is called animal heat.

The lungs may be considered as a stove placed nearly in the centre of the body; the air and the venous blood are the fuel which supplies it. If either of these fail, the body necessarily becomes cold. The air is almost always present in due quantity; for malconformations rarely affect the trachea, or the bronchial tubes. The venous blood occasionally either does not arrive at all at the lungs, or it is not carried there in sufficient quantity, in consequence of some of the malconformations I have just described; that fuel then fails, and the body becomes cold; so that the coldness of the body becomes a measure of the diminution of the quantity of the venous blood sent into the pulmonary organs.

The greater part of the blood, and, indeed, occasionally the whole, becomes finally venous, in consequence of its insufficient exposure to the air. The rosy hue of health is then lost, and the skin is tinted blue, dark purple, or livid, from the transmission of the colour of the venous blood through the cutaneous capillaries.

OBSERVATIONS ON RENAL DROPSY;

Illustrated by Cases, and a Dissection.

By John Anderson, Esq.
Late Clinical Clerk, Guy's.

[Concluded from p. 866.]

Anasarca (even inflammatory) may and does occur without albuminous urine; and it is by no means necessary to the existence of renal disease that anasarca should be present; coagulable urine does, though rarely, occur without it, as instanced in the experiments of Dr. Barlow, &c. before alluded to. In apoplexy this may happen; and in one of the cases before mentioned, I think I am correct in saying there was no dropsical effusion. In dyspepsia the urine is said to be albuminous; this coincidence

The following is a TABLE, in part illustrative of the Experiments before detailed, shewing the state of the Urine in various Diseases, principally with regard to its coagulability by heat and acid, taken from 50 Patients promiscuously. The Urine of the remaining 91 was examined in a nearly similar manner.—With regard to the specific gravities, those will be found high where the Urine had a copious sediment, from this latter not having been allowed to settle,—the most correct way, as I was then informed, of taking the specific gravity of urine of that nature.

Name.	Age.	Colour of the Urine.	Colour and Nature of Sediment, if any.	Coagulable by Heat.	Coagulable by Nitric Acid.	Acid or Alkaline Properties.	Sp. Gr. Water being 1000.	Disease the Patient laboured under at the time.
Timothy Calligan	40	natural colour.	no sediment.	no coagulation.	no coagulation.	slightly acid.	1·016	Fever, convalescent.
James Panton.....	24	natural colour.	no sediment, cloudy.	scanty flaky precipitate.	quite re-dissolved.		1·017	Fever.
Samuel White	40	dark coloured.	copious dark sediment	no coagulation.	no coagulation. sediment not dissolved.	acid.		Fever, 2 hours before death.
George Tucker	14	natural colour.	no sediment.	no coagulation.	no coagulation.	slightly acid.	1·009	Epilepsy.
Edward Crowney	24	natural colour.	no sediment.	no coagulation.	no coagulation.		1·016	Rheumatism.
Thomas Wiggins	20	natural colour.	slightest flaky sediment.	no coagulation.	no coagulation.		1·021	Epilepsy.
John Saul	53	rather high coloured.	slight flaky sediment.	no coagulation.	no coagulation.	acid.	1·019	Ascites and anasarca.
Joseph New	25	not high coloured, scanty.	copious sediment.	no coagulation.	no coagulation. sediment dissolved.	acid.	1·033	Acute rheumatism.
John Haynes	47	rather pale colour.	no sediment.	no coagulation.	no coagulation.	acid.	1·020	Gastrodynia.
James Betley	51	slightly high coloured.	no sediment.	no coagulation.	no coagulation.	slightly acid.	1·020	
Maurice Williams	50	rather pale colour.	copious sediment.	no coagulation.	no coagulation.	alkaline.	1·013	Hemiplegia.
Joseph Marshall	55	light coloured.	cloudy, no sediment.	opalescent.	brownish coagulum.	acid.	1·011	Dysentery, renal disease; œdema of lower extremities.
David McGinnis.....	35	not high coloured, turbid.	copious pinky sediment.	no coagulation.	no coagulation. sediment dissolved.	very slightly acid.	1·024	Bronchitis.
Thomas Kennedy	32	rather high coloured.	no sediment.	no coagulation.	no coagulation.	slightly acid.	1·027	Colica pictonum.
Ebenezer Clogg	24	natural colour.	no sediment.	no coagulation.	no coagulation.	acid.	1·022	Cynanche tonsillaris.
Edward Larkin	43	rather pale colour.	no sediment.	coagulable.	coagulable.	not very acid.	1·019	Renal anasarca.

Timothy M'Carty	27	natural colour.	slight sediment, rather cloudy.	no coagulation.	no coagulation.	not very acid.	1·016	Fever, convalescent
John Brogan	50	natural colour.	no sediment.	no coagulation.	no coagulation.	acid.	1·016	Chronic bronchitis.
Joseph Simpson.....	43	natural colour.	no sediment.	no coagulation.	slight white coagulum.	not acid, not alkaline.	1·012	Phthisis and bronchitis.
James Maloney	50	natural colour.	no sediment.	coagulates slightly.	coagulates slightly.	slightly acid.		Ascites and anasarca, undergoing a mercurial course.
John Macnamara	52	pale colour.	no sediment.	no coagulation.	no coagulation.	not acid, not alkaline	1·034	Diabetes mellitus.
Richard Berry	40	dingy colour.	bloody sediment.	coagulates slightly.	coagulates slightly.	not acid, not alkaline.	1·019	Nephritis, anasarca.
Cornelius Sullivan....	40	rather pale colour.	no sediment.	no coagulation.	no coagulation.	not acid, not alkaline.	1·015	Pleuritis, convalescent.
Edward Cossington ..	32	natural colour.	no sediment.	no coagulation.	no coagulation.	not acid, not alkaline.	1·017	Head affection.
David Holly	50	natural colour.	no sediment.	no coagulation.	no coagulation.	not acid, not alkaline.	1·013	Lepra vulgaris.
Rachael Braybrook ..	27	natural colour.	no sediment.	no coagulation.	no coagulation.	very acid.	1·012	Icterus, convalescent.
Ann Sullivan	37	natural colour.	slight sediment.	no coagulation.	no coagulation.	acid.	1·017	Quotidian ague.
Margaret Atkins.....	18	natural colour.	no sediment, cloudy.	no coagulation.	no coagulation.	not acid, not alkaline.	1·012	Fever.
William Allen.....	48	pale colour.	no sediment, clear.	very coagulable.	very coagulable.	acid.	1·015	Anasarca from mercury.
Thomas Toyn	43	pale colour.	no sediment, cloudy.	very coagulable indeed.	very coagulable indeed.	very acid.	1·014	Anasarca renal? labouring under profuse salivation.
Thomas Philps	41	natural colour.	no sediment, cloudy.	coagulable.	coagulable.	acid.	1·020	Renal anasarca.
James Hill	42	natural colour.	no sediment, clear.	no coagulation.	no coagulation.	acid.	1·020	Gastrodynia.
David Murphy	46	pale colour.	copious sediment.	no coagulation.	no coagulation.	very acid.	1·032	Acute bronchitis.
Frederick Crown	45	pale colour.	rather cloudy.	coagulable.	coagulable.	acid.	1·015	Renal anasarca.
George Jennings	45	pale colour.	no sediment.	opalescent.	coagulable.	acid.	1·018	Renal anasarca.
Sarah Fewtrell	49	pale colour.	no sediment.	coagulable.	coagulable.	acid.	1·011	Renal anasarca.
Edward Arnott	43	very dingy colour.	bloody sediment.	coagulable.	coagulable.			Renal anasarca and bronchitis.
Harriet M'Donald	19	dingy colour.	sediment.	very coagulable.	very coagulable.	not acid, not alkaline.	1·020	Renal anasarca, amenorrhœa.
George Hopkins.....	21	natural colour.	slight sediment.	slightest opalescence.	quite re-dissolved.	acid.	1·022	Hypochondriasis.
Peter Wayland	48	rather high coloured.	no sediment, clear.	no coagulation.	no coagulation.	acid.	1·016	Bronchitis.
Timothy Roach	28	natural colour.	cloudy sediment.	no coagulation.	no coagulation.	acid.	1·020	Phthisis and bronchitis.
Samuel Smart.....	18	reddish-brown colour.	no sediment.	no coagulation.	no coagulation.	acid.	1·012	Icterus.
John Morley	29	rather high coloured.	copious pink sediment.	no coagulation.	no coagulation.	very acid.	1·034	Creeping paralysis.
Owen Woods	47	natural colour.	clear.	no coagulation.	no coagulation.	acid.	1·018	Bronchitis.
William Ralphs	36	high coloured.	clear, pink sediment.	no coagulation.	no coagulation.	acid.	1·028	Pleuritis and pneumonia.
Thomas Burgoyne	23	pale colour, scanty.	copious white sediment.	slightest precipitate.	re-dissolved.	not acid, not alkaline.	1·022	Dyspepsia.
Thomas Gray	38	pale straw colour.	no sediment.	coagulable.	coagulable.	acid.	1·013	Renal anasarca, ascites.
William Symons	43	rather high coloured.	clear.	opalescent.	slight brown coagulum.	acid.	1.019	Renal anasarca.
Charles Hunt	24	rather high coloured.	clear.	no coagulation.	no coagulation.	acid.	1·020	Delirium tremens.
James Davie	33	natural colour.	clear.	no coagulation.	no coagulation.	acid.	1·023	Erysipelas, convalescent.

I have not yet noticed; but the sympathy between the stomach and kidney, and deranged state of the former, render it possible and probable. In diabetes again, the presence of albumen is now and then manifest, and is said to be a favourable occurrence. The last stage of phthisis is occasionally accompanied by albuminous urine: three cases of this kind have occurred to me*. It must, however, be remembered, that any of these morbid states may be accompanied by certain degrees of dropsical effusion; and on a careful review of the different diseases just enumerated, a certain occasional degree of similarity in their terminations will be discovered; whether this can have the most distant relation to, or be in any way the consequence of, the morbid state of the urine, is still open for investigation.

In drawing towards a conclusion, it is but right to state that there are a few cases on record which would seem to shake our confidence in the importance of the coagulable state of the urine, and create a doubt as to whether the inferences just drawn are accurate—the treatment advanced correct—the principles laid down established on a sufficiently firm basis: added to this, the oppositions and objections of many eminent physicians; the opinion of many that the presence of albumen in the urine is so frequent, and so easily produced, as to afford no diagnostic mark whatever; and a generally prevalent idea, that in every case where the urine is coagulable, the kidney must be in a state of disorganization. To observe upon, and attempt to answer, these different theories and opinions, and more particularly to shew the entire fallacy of the latter, would lead to arguments equally long as unnecessary at present; they may probably form the subject of a future communication.

From what has been written, as partly the result of my own observations (however inadequate to the importance of the subject), and from the opinions of several eminent men whose works I have referred to, we may, I think, reasonably and unerringly infer, that there does appear to be some great and intimate connexion between these three points—coagulable urine, diseased kidney, and dropsical effusion. The importance of the former will be found principally in serving as a guide to our treatment, and being, as it were, a presumptive evidence of deranged kidney, before that derangement could, without some such evidence, be appreciable by us: not that we are to be entirely guided by the quantity, colour, or firmness of the coagulum,—this will be found fallacious; but, when this phenomenon is present, we may be assured the kidney is more or less involved; there is tendency to inflammation, to serous effusion, and active antiphlogistic remedies are peremptorily called for. The healing and reparative powers of the body will also be found much impaired and weakened in energy.

I fear I have already encroached too long on the time of the society; but the extent, interest, and immense importance of the subject, must be my apology; and, in conclusion, would beg to offer the following points for discussion:—

1st, The frequency of albuminous urine unconnected with dropsical effusion, but in conjunction with serous or sanguineous effusion, independent of general anasarca; and whether the different quantities of albumen present are to be considered as so many stages of diseased action.

2d, The connexion (if any?) between anasarca with coagulable urine, apoplexy, and organic disease of the heart, whether of the muscular or valvular structures, but principally with regard to hypertrophy of the left ventricle.

3d, The connexion and relation between anasarca, diseased kidney, and the presence of albumen in the urine.

4th, The pathology, as directing the plan of treatment; and

5th, The treatment most admissible and successful.

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* In one of these cases the urine assumed a form not often met with where albumen is present; it was excessively turbid when made, became clear at a temperature of about 150° F., and remained so for a few seconds. By continuing the heat, a copious precipitate of albumen, of the curdled form, took place. The anasarca was the most extensive I almost ever witnessed.

ON FEMORAL ANEURISM,

AND THE PATHOLOGY OF SECONDARY ANEURISMAL HÆMORRHAGE:

With Remarks.

By John Murray, M.D.
Deputy Inspector-General of Hospitals.

Cape of Good Hope, Nov. 1, 1833.

In the month of August, 1833, Monsieur Marchand, a Frenchman, resident in this colony, 39 years of age, five feet seven inches in height, of a healthy constitution, and very corpulent, came to Cape Town, from the country, for the treatment of a large pulsating tumor in the left thigh, which had been upwards of twelve months in forming. It originated in consequence of a severe blow received from the butt-end of a fowling-piece, between the upper and middle third of the thigh, in the situation of the femoral artery, where the sartorius muscle crosses it, and which gave him violent pain at the time. It was not, however, till upwards of two months after the accident that he became aware of the formation of any tumor, or of any unusual degree of pulsation in the part; and he was able to go about his ordinary business till within the last two months, when it began to be painful, to hinder his using the limb, and to prevent his sleeping at night. The tumor was very small when first observed, and increased gradually, attended with very strong pulsation.

On the 23d August, 1833, he presented himself to surgeon Bailey, who called surgeon Abercrombie and myself into consultation; and then the tumor was more extensive than could be covered by both my hands, of a flattened shape, and above three inches in elevation at the highest part. It reached from within an inch and a half of the crural arch, nearly to where the femoral artery passes through the tendon of the triceps; and its extent in the transverse direction was equally great. It was generally very solid and resisting; but in the central and most prominent part, where the skin was becoming thin, inflamed, and tender, it was more compressible than towards the circumference. The history and symptoms left no doubt of its being a circumscribed aneurism of the femoral artery, formed below the usual origin of the profunda, the progress of which had been restrained by the strong fascia of the thigh.

The only treatment that had been tried in the country was that of compression, by the application of lead and various sorts of plaisters over it, with a strap buckled tightly round the limb; which he was no longer able to endure, as the skin at the centre of the tumor was becoming inflamed and sore, the leg stiff and painful, and the veins congested; but his general health was very good.

It became a question which plan should now be adopted for the most effectual interruption of the circulation through the diseased part of the artery, in order to bring about the obliteration of its cavity and the absorption of the tumor. Mr. Bailey proposed tying the external iliac. I suggested, as there was sufficient room, that it would be more according to surgical principles and to the general recommendation of authors, to apply the ligature below the crural arch; which was agreed to.

A reference was then made to some works on anatomy, respecting the distance from the arch at which the profunda is usually given off from the common femoral; and we were not a little surprised at the difference in the accounts given by different authors on this point. Sir Charles Bell states it to be "four inches, more or less, *according to the size of the subject.*" Fyfe says "about two inches, and sometimes, though rarely, three inches;" Bransby Cooper, "one inch and a half." Lizars specifies no distance as being general; and Barclay says, in regard to it, that "he will not attempt to define what nature herself has not chosen to define." It seems therefore that no specific distance is to be depended upon.

As the situation of the tumor did not admit of getting the ligature placed with confidence below the origin of the profunda, it was agreed to tie the femoral artery about an inch under the arch, which we supposed would be above the origin of the profunda, and at the same time not too near to the lower branches of the external iliac.

The operation was performed on the 2d September, at 3 o'clock P.M.; when it was found that there was just barely scope for it, as the artery lay in such a deep hollow between the man's fat abdomen and the tumor.

An incision was commenced about an

inch and a half above the middle of Poupart's ligament, and continued downwards, in the line of the artery, to about two inches below it; being carried, in the first instance, through the skin and cellular substance. The superficial fascia below the arch was next divided, and in doing this an arterial branch was cut, which jetted furiously for a few seconds, but on being pinched by the forceps it soon ceased to bleed. Two or three large lymphatic glands were then separated to either side, out of the way, and the internal saphena vein, which was seen bending inwards to the femoral, was kept on the pubic side, and avoided. The fascia lata was then carefully slit open, when the femoral artery was discovered by its pulsations (which could not be felt before this fascia was divided), embedded in cellular and fatty substance. One or two nervous twigs crossing from the anterior crural were obliged to be cut, which seemed to give him sharp pain. The sheath of the vessel was now opened, and the artery separated and tied by a single round ligature, at about an inch below Poupart's ligament. It did not appear to us that the artery had yet given off the profunda, as the pulsation of only one vessel was to be felt.

The pulsation in the tumor ceased immediately, and a considerable degree of insensibility of the limb ensued; but we were rather surprised to find that only little diminution of temperature took place in it, which led us at the time to conjecture that the ligature had probably been applied below the origin of the profunda.

The usual treatment was pursued, and, in regard to the wound and aneurism, nothing worthy of notice occurred for nearly a fortnight. He suffered, however, dreadfully, for some days after the operation, from flatus in the intestines, which he was unable to expel: indeed he complained of nothing but of the agony which this occasioned him, and was constantly calling out that he was sure he would burst if not relieved. Purgatives, carminatives, absorbents, assafœtida, and anodynes, were exhibited without effect; and at last I thought of Dr. O'Beirne's plan of introducing the tube of the stomach-pump up beyond the upper annulus of the rectum; and were it only for the information which the Doctor has given us, of this effectual remedy for the tympanitic state so frequently attendant upon operations about the abdomen, constituting a symptom both distressing and dangerous, I should consider his work on Defecation as one of great value to suffering humanity. Upon the entrance of the tube into the colon, an immense volume of air rushed out through it, with instantaneous and perfect relief; and he was not troubled with any return of this complaint. He was harassed, however, soon afterwards, with the effect of the purgative medicines which he had previously taken, and which began to act severely after the removal of the confined flatus; but a good dose of fresh olive oil (an excellent medicine for soothing and checking the purging of irritated bowels) soon remedied their teasing action.

Although every thing seemed going on very well for fourteen days, yet we were by no means without great anxiety about the result of the operation, having found the profunda given off *at less than an inch* from Poupart's ligament, *in every one* of six different subjects we had examined in the interim—*i. e.* higher than where we had applied the ligature; and therefore we were afraid of hæmorrhage from the upper part of the artery when it separated: and a reference to the results of other cases, where the femoral artery had been tied in the groin, did not tend to allay our apprehensions.

In two out of the six subjects which we examined, the profunda was given off *at less than a quarter of an inch* from Poupart's ligament, and, in these, the ligature of the femoral artery could not perhaps have been applied above the profunda with safety, on account of the proximity of the epigastric and circumflex ilii branches, which were large.

In the patient mentioned by Mr. Allan Burns, upon whom Sir Astley Cooper tied the femoral artery underneath Poupart's ligament, hæmorrhage occurred on the fourteenth day after the operation, from the vessel having been tied close to the origin of the epigastric. No plug was found in the canal of the femoral, and the adhesion at its extremity appeared to have been lacerated, after the separation of the ligature, by the impulse of the circulation.

With reference to the aneurismal tumor, it was observed at the end of a fortnight, that the inflammation and tenderness of the integuments had nearly subsided—that there was no return of

pulsation in it—that it had become much softer and more compressible—but that when the bandage was taken off, it resumed fully its original size.

In the event of hæmorrhage occurring, Madame Marchand had directions to apply pressure at the groin, and to send immediately to the hospital for assistance; and such instruments and dressings as might be wanted were kept at hand in the room.

On the morning of the fifteenth day after the operation (16th September), which we had always deemed a critical one, the wound was dressed at 10 A.M. and looked healthy; the ligature remained, and no attempt was made to take it away. Our patient was recommended still to keep very quiet in bed, and he was in high spirits, as his cure seemed going on so prosperously. In less than ten minutes, however, after our visit, a violent hæmorrhage came on, which had nearly proved fatal before Mr. Bailey's assistant (Mr. Bickersteth) got to him. He had already lost between three and four pounds of blood, the effect of which, from the sudden manner in which it had come away, was such that he seemed dying: his countenance was ghastly; his pulse imperceptible; his skin covered with a cold clammy sweat; his stomach was forcibly ejecting its contents, and he was gasping spasmodically for breath.

Mr. Bickersteth found the blood, *which was of a florid red arterial colour*, still eddying up from the wound by the side of the dressings, and made pressure upon the external iliac artery; after which it stopped. Mr. Abercrombie and I arrived soon after, and from the critical state of the patient, seeing that no further operation for tying the femoral in the groin was practicable, and conceiving the bleeding to be from the upper orifice, we agreed upon the immediate necessity of tying the external iliac: consequently, after waiting a short time for Mr. Bailey, who was not to be found, and for the patient to rally from his state of collapse, I performed the operation without moving him from where he lay, after the method of Sir Astley Cooper; and it was found to be a much more simple and easy one than the preceding: indeed, with a knowledge of the anatomy of the parts, no operation can be more simple in the manipulations—nothing more easy than the division of the integuments, and of the successive layers of the abdominal muscles—the separation and pushing aside of the peritoneum from its loose connexion with the iliac fascia—the finding and detaching of the artery, and the passing of the ligature round it.

Previously to and during the operation, a sort of precautionary pressure had been kept up on the crural artery, by the handle of the door-key placed over a linen pad; but this had been gradually relaxed to almost none at all, and was taken off altogether before I tightened the ligature. Therefore, on finding the external iliac beating very strongly, so close to the divided femoral, and considering also that his strength was much recovered, and that the pulse at the wrist was good, we were rather surprised that the hæmorrhage had ceased of itself before I tied this vessel.

He bore the cutting part of the operation remarkably well, and not above a tea-spoonful of blood was lost from it; but the tying of the artery seemed to give him a very great shock. His breathing became instantly oppressed; he complained of a pain about the heart, and said he had an agonizing sensation in the leg, at the same time that it became quite cold, and felt to him as if perfectly dead. Two stitches were put into the external wound (which was long and deep), to bring its edges and the integuments together, and these were supported by straps of adhesive plaister. We were now enabled to examine the wound in the groin to the bottom; the coagula were removed, and no bleeding ensuing, it was dressed with dry lint, compress, and bandage. The limb was rubbed and rolled in warm flannels, with bottles of hot water placed round it; and, to allay the general irritation, he had at first twelve drops of black drop in camphor mixture, and ten more in two hours afterwards, which succeeded. In the course of a few hours he seemed to have nearly quite recovered from the bad effects of the sudden loss of blood, as well as from the shock of the operation; and he passed a fair night.

The natural warmth of the limb did not become perfectly restored till after two or three days; and it was curious to observe the effect which the obstruction to the supply of blood after this operation had upon its nervous functions:—At first, while it remained quite cold, it was found that he was unable to move a toe or a muscle, and that the skin and

flesh were insensible to the touch, and even to pinching, although he was groaning from the pain he felt in it, particularly about the knee. It seemed the same sort of sensation which persons feel after amputation; but here the trunks of the nerves were uninjured. When the natural heat was becoming restored, he said he felt a pricking and creeping sensation throughout the limb, which was far from being agreeable, yet not altogether painful; he described it as like to that which a person feels after his leg has been benumbed, or what is commonly called *asleep*.

The following day he began to complain of much pain in the side, above the site of the last operation, which was evidently from inflammation of the external integuments, and not of the peritoneum. The scrotum was also painful and swollen, proceeding probably from irritation of the spermatic cord during the operation. This ended in rather an extensive circumscribed suppuration of the cellular membrane of these parts, some portions of which sloughed, and came away from underneath the skin on the 11th day; after which period the parts granulated kindly. Symptomatic inflammatory fever attended this cellular inflammation, and ran high; but his constitution rallied most favourably after the 11th day.

The aneurismal tumor, which seemed at first to diminish a little after this operation, was observed towards the end of a fortnight to become again rather distended, and more compressible, as if the contents of the sac were becoming more fluid; but there was no return of pulsation nor of pain in it, and the limb had long re-acquired its natural heat and sensibility. No fear was entertained of a recurrence of hæmorrhage from the wound in the groin, as it was granulating and healing most favourably; and we had much confidence that none would happen from the external iliac artery, when the ligature upon it should become detached;—in short, we were not anticipating any further untoward occurrence to prevent a speedy cure, when, in the evening of the 29th September, about 7 P.M. (at the end of the again critical 15th day), I was suddenly summoned from dinner, with the announcement that our patient was *bleeding to death!*

Reflecting upon this alarming intelligence on my way to him, I came to the conclusion in my own mind, that if the bleeding was from the external iliac artery, it would most probably have proved fatal before any assistance could have been rendered him; but as I had for some time been entertaining doubts in regard to the source of the former bleeding (*i. e.* whether it had proceeded from the cardiac or distal end of the divided femoral), from the way in which it stopped, and from the appearance of the tumor latterly, I thought, if I found him still alive, that the bleeding might probably proceed from the distal end of the artery, by a retrograde current from the anastomotic branches of the profunda.

On my arrival I was delighted to hear him speaking, although he was quite exsanguine and almost exhausted. He had again lost about three pounds of blood. Mr. Bailey, who had reached him a little before me, was keeping up a strong pressure with his hands in the iliac region, above the site of the last ligature, by which he said the hæmorrhage had been suppressed. He conceived the bleeding to be from the external iliac, but had not been able to make any examination, having only taken the place of Madame Marchand, who had been making pressure where he was now doing, from the time the bleeding was discovered.

The bloody cloths and dressings were speedily cleared away; and on the parts being exposed, it was soon evident that the hæmorrhage had come from the wound in the groin; and when I removed the coagulum that was in it, the blood began to flow afresh, *not per saltum arterialem*, although it was of a red arterial colour, but *in a continued uniform stream;* and I was delighted to find that it stopped by pressing my finger upon the aneurismal side of the artery; on which I ventured to pronounce our patient safe; and, confident that I commanded the hæmorrhage, Mr. Bailey now removed his hands, to his own and the man's great relief both of body and mind. A graduated compress was placed over the pervious end of the vessel, and bound tightly down by a bandage, which completely prevented the further escape of any blood. The wet cloths about him were changed, a dry flannel bandage was put upon the limb, and all parties were again tolerably at their ease.

Being less able to bear the second

hæmorrhage than the former, he remained for many hours in a state of great prostration, with excessive pain and oppression at the præcordia, and a most unquenchable thirst; for which he was prescribed with advantage some draughts, composed of liq. ammon. acetat. ℥ss.; spt. æther. nitr. 3ss.; gutt. nigr. iv.; mist. camphor. ℥j.; syrup. simpl. 3j. M.

A renewal of the suppurative inflammation of the cellular tissue, above the upper wound, ensued (probably from the pressure that had been kept upon it), which persisted for nine or ten days, accompanied with a great degree of serious constitutional disturbance, which was not without danger. The aneurismal sac continued distended, soft, and undulatory, for about a week, from which circumstance it appeared to be fed by fluid blood; but it had no pulsation, and no whizzing sound.

On the 9th October, however (not having seen it for several days previously), I observed a very sensible diminution in its size on removing the bandage; but it did not feel as if any solid coagulum had formed in it. The compress, originally placed on the lower orifice of the artery, was retained for a fortnight in the same place, the wound being daily dressed by introducing lint at its edge. The ligature upon the external iliac did not come away till the 17th October. At the present date the wound in the groin is almost perfectly cicatrized, and that in the abdomen will soon be closed also. He now walks about upon crutches; but the limb feels very weak, and he has great pain and stiffness about the knee.

For the last fortnight the limb has been tightly bandaged, from the toes upwards, and an additional degree of compression kept upon the aneurism by the application of a gum plaister under this bandage, with a compress and a strap buckled over it. Still, however, upon examination, the tumor has not made a satisfactory progress towards becoming absorbed, as it retains two-thirds of its original size. It is soft and fluctuant when he lies upon his back with the leg and thigh semi-flexed; but when he stands upright, or bends the thigh much up, it feels quite tense and hard. Upon strong compression by the hand or a bandage, its volume becomes very sensibly diminished; and, on the contrary, when this pressure is removed, or when he stands up, it becomes visibly augmented. But as he complains of great pain in the site of the wound in the groin when this strong compression is made, we are careful of employing it, for fear of rupturing the adhesion at the orifice of the artery, whence the hæmorrhages proceeded.

Whether any further means will require to be resorted to for effecting a perfect cure I cannot yet well judge; but I rather think it probable that the aneurism will not disappear spontaneously, considering that it is now two months since the direct current of blood was interrupted in the main tube of the artery; and that it is pretty certain that the disease must, to a certain degree, be maintained by the collateral circulation. Whether any blood actually continues to circulate through the diseased part of the femoral artery we cannot ascertain, as no pulsation or undulatory vibration is to be felt in, or immediately below, the tumor. In the popliteal portion of it, however, a pulsation is perceptible, which seems equal to that in the other ham.

Remarks.—Reflecting upon this case, I have thought it of sufficient interest for publication, as the candid details of untoward occurrences after operations are often of more advantage to pathology and practice, than those of uninterrupted progress to favourable results.

I have no doubt now that the first hæmorrhage was from the distal end of the femoral artery, and that it might have been stopped in the same manner as the second was, without any necessity at all for tying the external iliac, had we been equally prepared to expect what we discovered afterwards, and had we examined properly into the state of the parts before proceeding to that operation.

I still think that the first operation was certainly done in conformity to the recommendation of some of our best surgical authorities; but, conjointly with many recorded cases of the ill success attending it, the result has taught me not to recommend tying the artery in the groin in similar cases; for, to say little of the greater difficulty of the operation compared with that of the ligature of the external iliac, it appears to me that it must always be attended with great risk of secondary hæmorrhage, whether the artery be tied

above or below the origin of the profunda. In this instance I conceive that it was tied above, and that both hæmorrhages took place from the distal end of the artery, by a retrograde current from the anastomosing branches; but should it be tied below, and, as might happen, near to the origin of the profunda, there must then be great risk of hæmorrhage from the cardiac end, which is still more dangerous, as coming with a full arterial impulse direct from the heart. In regard to the plausible reason advanced for preferring the first operation—viz. the prospect of a more efficient collateral circulation for the nourishment of the limb, on account of the preservation of the lower branches of the external iliac, I consider this to be of very little weight; for the almost innumerable inosculations that exist between the vessels of the internal iliac and those of the thigh, constitute such a circle of communication, that, in a healthy subject, no one need hesitate to tie the external iliac, without fear of destroying the life of the limb; and Harrison says, " the success which has followed this operation has so far exceeded that of tying the femoral artery for the cure of popliteal or femoral aneurism, that some surgeons have suggested the propriety of performing the iliac operation *in the first instance*, for the cure of those diseases."

I should have mentioned, that Brasdor's method of tying the artery, *ultra tumorem*, was agitated at first, as it seemed possible to apply a ligature upon the vessel before passing through the tendon of the triceps; but as the sac was already thin, inflamed, and about to ulcerate, from over-distension, it was rejected, being thought likely to hasten its rupture, by increasing the impetus of the circulation against its parietes; for that an increased local impetus actually does take place, for a time at least, at the part immediately above the ligature after an artery is tied, every operative surgeon who has taken hold of, or felt, a recently tied vessel, must, I think, be convinced: hence I deem the practice unadvised, to operate on this plan in cases of aneurism where the integuments have become thin, and disposed to ulcerate or slough; and certainly, in many of the recorded instances where this mode of operating was adopted, the rupture of the sac was rather accelerated by the operation. In cases, however, where the integuments are sound, and the walls of the sac strong, and able to resist the temporary increased efforts of the circulating powers to propel the blood in its natural channel, there seems much reason to expect that it will succeed; for, after a certain time, when the blood has found a new route to the lower part of the limb, this increased local energy gradually diminishes, till at length the divided or tied extremity of the artery becomes quiescent, the blood in it stagnates and coagulates, and is carried off by the absorbents; and the end and sides of the artery contract, adhere, and become obliterated.

Sir Charles Bell states, " if it were by any accident to happen that there was a necessity of amputating below the knee, in a case of aneurism in the ham, he has no hesitation in saying that the tumor would diminish, and the aneurism suffer a kind of spontaneous cure." But this, I think, must depend upon the state of the sac and integuments, as I have just mentioned; although, in respect to the sympathetic call upon the energies of the collateral circulation, the removal of the limb would make some favourable difference; and I would further observe, that the success of Brasdor's method must also depend very much upon whether or not the artery be tied at a part between which and the aneurism no branches of importance originate, to lead the current of the circulation through the diseased portion of its tube.

I have the notes of a case which occurred in the Hôpital of La Charité in Paris, under Messrs. Boyer and Roux, when I was there in 1816, to which I would refer, as bearing upon this point. A man was admitted with two aneurisms in the course of the left femoral artery, the one situated in the groin, the other in the ham; and the foot and leg had become gangrenous. On the 28th February amputation was performed above the knee, and on the 2nd March Monsieur Boyer gave a clinical lecture upon the case, wherein he stated that he was called to see the man six weeks previously, when, finding the aneurismal tumor in the ham very large, and the other in the groin also about the size of a hen's egg, the idea presented itself to him that the most proper plan of cure would be to tie the external iliac artery; but the house being ill adapted for the performance of an operation, and the patient unwilling to go to the hos-

pital, he merely recommended compression. A month afterwards he was again called to him, when he found that the pulsation of the popliteal tumor had ceased, and that the foot and leg were beginning to mortify. The man was now persuaded to go to the hospital, and amputation has been performed. He pointed out that a chance of union by the first intention was given to the stump, by the application of agglutinative plaisters (which plan was just beginning to be introduced at this hospital by Roux, after his journey to London), and that nothing was attempted as yet for the cure of the inguinal tumor, as he thought any operation to interrupt the circulation through it might interfere with the cure of the stump; and there was no urgency for it. Besides, two operations would have been more than his constitution could bear at one time; and he thought it would be right to give the aneurism a chance of being cured by compression along with ice. After the stump heals, if this does not succeed, it was in their power either to tie the crural artery below Poupart's ligament, or the external iliac.

March 23d.—No union of the stump has taken place; its edges are still kept drawn together very tightly by adhesive straps (a great deal too much so, as they evidently excite much pain and irritation), and the use of pressure to the aneurism in the groin has been commenced by a sort of tourniquet over a pad.

30th.—Stump not doing well; it looks irritable, and the surrounding integuments are hard and inflamed. The trial of making its lips adhere by straps is still continued, and over these poultices are applied. The pressure upon the aneurismal tumor causes great uneasiness, and does not seem to be of any benefit.

April 5th.—Stump much swollen; the straps are applied so tightly and so close as to confine the discharge.

May 8th.—The stump is healed; pressure has been continued, along with a bladder of ice over the aneurism; but, on minute examination, these applications are found to have done no good, for the tumor is as large as ever. A more general pressure is now commenced by a tight bandage over the whole stump, with graduated compresses placed immediately over the aneurism; but Roux has no hopes of success from this plan, and thinks that the external iliac will have to be tied eventually; but they seem very shy of this operation here.

I left Paris very soon after this, and do not know the ultimate result; but the above is enough to shew that amputation performed at some distance below an aneurism will not effect a cure if important branches arise between it and the ligature on the artery.

In regard to secondary hæmorrhage, Mr. Guthrie deserves the highest credit for the clear and impressive manner in which he has drawn the attention of the profession to the frequency and danger of its occurrence from the *distal* end of a divided artery. He states it as a very curious fact, that in recent wounds, when bleeding occurs after being arrested for a period of four hours, it takes place, in all probability, from the distal end of the vessel; and that this arises, according to his observations, from a difference in the process of closure adopted by nature in one end of the artery to that in the other; having found that when an artery is divided, the retraction and contraction of the distal end is neither so perfect nor so permanent as that in the cardiac extremity; and that in the former the internal coagulum is either altogether wanting, or comparatively very defective; and he mentions, that when the blood comes from the distal end of the artery, it may be distinguished by its being, at least for many days, of a *dark venous colour*, and by its *welling* out in a continuous stream, without any arterial impulse.

In aneurism, when an artery is tied by a single ligature, no retraction of its ends takes place, but a process of adhesion is instituted, to prevent hæmorrhage when that portion of its cellular coat embraced by the ligature dies; and if this adhesion be not sufficiently strong at either end to resist the impulse of the circulating powers when the ligature becomes detached, secondary hæmorrhage must ensue. Sometimes this will take place from one end of the artery, and sometimes from the other, according to circumstances; but it generally happens that when it does occur, surgeons almost invariably consider it to proceed from the cardiac orifice, and resort to means adapted to arrest it upon this supposition; by which, however, it is but too well known they are not always successful.

To account in some degree for the

frequency of its occurrence from the distal end of divided arteries, it must be mentioned, that it has been found that the adhesive process is not so rapid nor so effective in this as in the cardiac ends, which, I think, may be owing, in a great measure, to the interruption of the supply of blood and nervous energy through its nutrient vessels or *vasa vasorum*, caused by the ligature; as the quantity and quality of the coagulable lymph effused from its edges and inner surface, and the activity of the organising powers by which the union is effected, must be in direct proportion to the degree of vitality and energy of its vessels; and hence there seems a strong reason why, in all cases of secondary hæmorrhage, after operations for aneurism, we should expect it to proceed *even more frequently* from the distal than from the cardiac end of the vessel.

On taking into consideration that the frequent occurrence of secondary hæmorrhage, in the present mode of curing aneurism, arises entirely from a division of the artery being made by our way of applying the ligature, I think that in some situations a preference is due, and will some day be more frequently given by our surgeons, to the French method of obliterating the canal of the vessel "*par aplatissement*," by which its continuity is preserved, and the risk of this most dangerous accident thereby prevented.

In the foregoing detail of our case, I have spoken of the hæmorrhages as having proceeded from blood brought into the distal end of the femoral artery, chiefly through the profunda, by a retrograde current from its capillary inosculations with branches of the iliac arteries; but I am aware that this explanation is not sufficiently correct as to the nature of the collateral circulation which is ultimately established in a limb, after the ligature of its main arterial trunk.

At the commencement of the collateral circulation, or rather before the vessels through which it is eventually carried on are properly developed and perfected, it would appear, that although a supply of blood by the ordinary or natural anastomosis is very speedily conveyed into the distal part of the limb, yet that the properties of this blood become altered in its passage through the capillary inosculations, and that a change is effected in it analogous to that which it undergoes in its passage from the arteries into the veins, which must render it unfit for the proper nutrition and other vital functions of the limb; and that hence there arises a necessity or sympathetic stimulation for the immediate establishment of a more direct and efficient circulation, which, in fact, does take place in a short period.

Barron Larrey, in his Clinique Chirurgicale, mentions several cases of very astonishing changes which appear to take place in the course of the circulation after wounds of large arteries; and Guthrie's description of the process by which the collateral circulation is effected is so highly interesting, that I cannot help transcribing it. "If," says he, "a limb be injected and dissected most carefully four or five days after a ligature has been placed high up on the principal trunk of an artery, the capillary vessels will be seen to be well injected, but few or none will be found large enough to admit of the inosculation being traced throughout. If another limb be so injected and dissected forty days after the ligature has been applied, a difference will be distinctly observed between the two preparations; in the latter, the capillaries will not appear to be so fully injected, but several larger and more tortuous vessels will be found in situations where they were not expected to exist; and the anastomoses of these, one with another, and generally by arches, may be traced to their communication with the principal trunk, both above and below the obliterated parts. Let an incision now be made in the nearest pervious portion of the lower part of the artery, and red arterial blood will issue from it. The communication has become direct by direct vessels, and the capillaries have returned to their accustomed duties."

I may observe, *en passant*, that Mr. G.'s words imply that red arterial blood would issue from the injected limb, which is *poetical*.

At what time within forty days this direct communication becomes established, or whether it is always complete at that period, the histories of cases and of dissections do not lead us precisely to determine: it seems, however, worthy of being noticed in Marchand's case, that hæmorrhage occurred exactly on the fifteenth day after each operation, and that each time the blood was of arterial character; from which it may

perhaps be inferred, that in fifteen days special vessels become developed between the parts of the artery above and below the ligature; but I doubt whether this communication be even now so perfect in our case as the above quotation would lead us to imagine, else the direct vessels must enter below the diseased part of the artery; for otherwise there would surely be a return of pulsation or undulation in the aneurism, synchronous with the contractions of the heart, which does not exist here, although this has occurred in some instances after Hunter's operation. Had hæmorrhage only taken place after the first operation—from its coming on in such a sudden and profuse manner—from its being attended with such excessive exhaustion of the vital powers—and from the blood being of arterial character,—it would have passed off as having proceeded from the cardiac end of the artery, and only been considered as another proof of the frequency of the cellular coat of the artery becoming divided by the action of the ligature about the fifteenth day; but as from the time the first hæmorrhage took place there was no ligature upon the vessel, and no particular pressure kept upon the wound, it would seem to prove that the collateral circulation *then* became more fully formed, or established in a perfect manner; particularly, too, as all the natural functions of the limb seemed also to have become perfectly restored by this time.

In reading over other cases of secondary hæmorrhage after ligature of the femoral artery, I am now very much inclined to think that in many of them it proceeded from the distal end of the vessel, although this was not recognised at the time, from the operators probably not being aware of the great proneness to its occurrence, or of the possibility of its being from the end, but forthwith proceeding either to tie the artery higher up, or to amputate the limb, without any examination of the wound.

Perhaps even to this mistake are we indebted for one of the most brilliant improvements in surgery—the ligature of the external iliac artery! which, it will be remembered, was first performed by the late Mr. Abernethy, in a case not dissimilar to the one here detailed; for I am inclined to think, when secondary hæmorrhage occurs from the cardiac end of such a large artery as the crural, that, in 99 cases out of 100, it will prove fatal before proper assistance can be rendered to the patient, if a surgeon be not immediately at hand. But *then death is not always inevitable* without tying the external iliac; for I have known the crural artery to be obliterated by pressure on the groin, and the limb saved too, although no one would recommend the practice.

I confess that in the first instance no suspicion of the real source of the bleeding occurred to me in this case till after I had applied the ligature round the external iliac; and had it not been for the recurrence of the accident, I should have continued in the belief of its having proceeded from the upper orifice of the artery, and that I had done a mighty good deed for our patient by the second operation, which it now appears he might have been spared.

If nature does not effect a cure in Marchand, it may be required to tie the artery on the distal side of the tumor, which can now be done under the advantages I have stated as necessary for a fair prospect of success. There is, however, a choice of other plans to be taken into consideration—as the application of *moxas*, recommended by Larrey; and of *acupuncturation*, suggested by Velpeau, &c. For some time, however, we purpose trusting his recovery to the further efforts of nature*.

JNO. MURRAY, M.D.
Deputy Inspector of Hospitals.

ANALYSES AND NOTICES OF BOOKS.

"L'Auteur se tue à allonger ce que le lecteur se tue à abréger."—D'ALEMBERT.

Observations on the Causes and Treatment of Ulcerous Diseases of the Leg. By J. C. SPENDER, Member of the Royal College of Surgeons in London.

MR. SPENDER says, in his preface, that about a thousand cases of "diseases of the leg" have fallen under his care during the last five years, and adds, that he must have been very careless not to derive some practical information from

* Dr. Murray has informed us, that the patient mentioned in the forogoing paper got perfectly well, and that the aneurismal tumor became absorbed in the course of two or three months, without any further treatment.

such a field of observation. One of the first inferences from those opportunities which we are presented with, is, that we are incorrect in ascribing the frequency and obstinacy of ulcers of the leg to the dependent position of the limb, or to its distance from the heart. The frequency of the disease in question our author attributes, first, to the exposure of the lower limbs to injuries, and, secondly, to a palpable unhealthiness of the structures of the part, particularly a varicose state of the limbs. It is quite clear, however, as he himself admits, that the dependent posture of the limb, and distance from the centre of circulation, may be said to cause the varicose state directly, and therefore indirectly the ulcer; in short, the attempt to get over this point savours too much of special pleading and sophistry. However this may be, great importance is attached, and not without justice, to a varicose state of the limb; and the fact is farther rendered apparent, from the calculation that out of 100 cases he found—

79 Varicose, consisting of 41 simple, 27 very irritable, 11 very indolent.
21 Non-varicose..... 15 ditto, 4 ditto, 2 ditto.
Of the whole number .. 68 females ..... 32 males.
Of the 79 Varicose .... 59 ditto ..... 20 ditto.
Of the 21 Non-varicose 9 ditto ..... 12 ditto.

Now all this, though very true, happens not to be very new; in answer to which Mr. Spender argues thus:—

"An examination of the works of the most celebrated writers on Ulcers will soon convince us that the varicose state of the veins has not been considered so frequent and essential a cause of these diseases as I have attempted to prove. A very brief review will be sufficient to show that this affection of the veins, though recognized by some authors, has not by any been brought so prominently forward as I think its importance demands; much less proposed as affording the leading character for arranging ulcerous complaints of the leg. This inquiry will also serve the purpose of introducing us to the consideration of the classification of ulcers; which is one of the objects embraced by the present chapter.

"Although it is well known that Wiseman speaks of a varicose ulcer, and used in its treatment the laced stocking, his opinions of the nature of this kind of sore are not, I think, so generally understood. He does not view the varicose state as a cause of the ulcer, strictly speaking; or certainly not to any great extent; for when this diseased condition of the veins was found in combination with a sore, he arranged it, to use his own words, amongst 'the accidental differences which are taken from those things not intrinsical to the nature and constitution of an ulcer.' But even had this distinguished man considered the varicose affection in the juster light of an essential cause and element of the ulcer, yet, by the arrangement of sores which he afterwards adopts, it is obvious that he did not think it operated to the extent which I believe it does in the formation or continuance of the disease.

"The paragraph already quoted for another purpose from Mr. B. Bell is the only instance in which he refers to the existence of the varicose disease, in his whole book; and there he viewed it merely as a symptom or effect of the ulcer. What he has stated in that place is very plain and unequivocal; but if any farther evidence were required to prove that he did not consider this affection of the veins as productive of any kind of sore, it would be afforded by observing the manner in which he praises the use of pressure in the scrophulous ulcer. 'In no species of sore,' says he, is it so evidently indicated, and of so much utility.' That in this kind of ulcer, when situated in parts which will admit of it, compression is of great benefit, by levelling the edges, every one must allow; but then its advantage must be much greater in those cases of sore arsing from varicose veins and adventitious deposits. In confirmation of the correctness of the view here taken of Mr. Bell's opinion, it may be farther added, that in his arrangement of sores the name of varicose finds no place, although he has eleven divisions of ulcerous diseases.

"Mr. Baynton, it is true, speaks of varicose veins 'attending' two or three of the cases he has recited; and likewise asks, in another place, whether 'one of the difficulties in curing ulcers may not arise from a deficiency of the absorbent powers of the veins in that variety of the disease attended with a vari-

cose state of those vessels;' but he no where assigns the varicose affection as a cause of ulcers; neither was it with a view to sustain the action of the veins that he introduced the adhesive plaisters. The thought which directed him to try the strapping in states of old ulceration, was the good he had observed from having as small a cicatrix as possible after the healing of the sore; and justly considering that this desirable object would be greatly effected by approximating the edges as nearly as he could, he had recourse to strips of adhesive plaister to obtain this end. The obstacle to be overcome in permanently curing a bad sore, he thought consisted in a disordered state of the lymphatics, and that the general pressure on the limb acted beneficially on the ulcer by assisting their function. After advancing arguments for this opinion, he states, 'I therefore conclude that the principal difficulty which occurred in the curing of ulcers, has been occasioned by deficiency of power in the absorbent vessels.' In another place, we shall have a better opportunity of inquiring into the manner in which compression acts; where I think it will be evident, that although it is of great service, by exciting the lymphatics, especially when unnatural deposits exist, yet that its chief advantage arises from supporting the veins, and thus indirectly accelerating the capillary circulation. All that is required to prove here is, that Mr. Baynton did not view the varicose veins as a leading cause of ulcers; nor was it with the primary intention of aiding and strengthening this class of vessels that he introduced his very useful method of treatment.

"Dr. Underwood and Mr. Whately have not once alluded to the existence of varicose veins in the leg as being a cause of ulcers, although they are both very able and strenuous advocates of pressure. The first of these writers has not, that I can find, even mentioned this condition of the veins in any place of his treatise; and the second has only once incidentally adverted to it, in a part of a note, as being a state benefited by the use of the bandage, in common with some other advantages obtained by its employment. 'I have been very particular,' says Mr. Whately, 'to discover the true cause of an acknowledged fact; namely, that wounds on the lower extremities are healed with much more difficulty than those which are made in other parts of the body.' He judiciously observes, 'If the cause of this fact be ascertained, we may then hope to arrive at a certain method of cure.' He then continues—'That wounds and ulcers of the leg are of more difficult cure than those in any other part of the body, is a circumstance which is attributed either to their dependent situation, or to the greater languor of the circulation in them as extreme parts. The more general opinion, I believe, is, that it is owing to the former cause; but Dr. Underwood attributes it to the latter—'I think, however, that we shall find, on the strictest examination, that it is almost entirely owing to their dependent situation.' Although I believe these explanations of the fact not sufficiently precise to be satisfactory, yet both of these writers carried out their principles into practice much more consistently than many others entertaining their opinions. Mr. Whately employed compression to a great extent, as the agent most suited to counteract the real or supposed ill effects of a dependent position; and Dr. Underwood used the remedy to the same degree, as being able to admit of exercise with a view to rouse and assist the vitality of the parts. Neither of these authors has, however, acknowledged, or at least not mentioned, the frequent presence of the varicose state which I have attempted to establish; the admission of which is, I think, not only necessary to account for the greater liability to sores, and difficulty of healing them, in some legs than others, but at the same time affords a more defined cause of the disease, against which our remedies can be applied with better precision and success, than merely directing them to the natural condition and properties of the limb."

He next proceeds to comment on what Sir E. Home has said on the same subject, and, we think, makes good his position, that the varicose affection has never been made the *basis* of an arrangement of ulcers, which has usually been derived from their superficial aspect. The evil which Mr. Spender protests against, as having resulted from this, is the "limitation given to the employment of pressure," and the use of "washings, fomentations, and poultices;" to all which our author has a mortal

antipathy. His arrangement is abundantly simple, depending upon this—whether the ulcer has or has not "the varicose affection and its consequences;" at the same time he observes, that the success of his treatment remains unquestionable, whether his theoretical views be admitted or not.

When the difficulties are such as the unassisted efforts of the system are capable of overcoming (as is usually the case in ulceration on the surface), the principle of treatment laid down consists *in imitating a natural process;* when the obstacles are such as the unaided powers of the body are unable to vanquish (as is usually the case in the deeper-seated ulcers), the principle of treatment consists *in introducing a healthy action.*

The natural process witnessed in the healing of wounds, when left undisturbed, is the formation of a scab; and this our author strenuously endeavours to imitate.

"Of all the kinds of outward application which I have tried, an ointment containing a very large quantity of prepared chalk forms the best artificial crust. The earthy matter must be in a much greater proportion than enters into any ointment in the Pharmacopœia, consisting of about three pounds of chalk to two pounds of lard. Even four pounds of chalk will be readily taken up by two pounds of lard; and if about three ounces of olive oil be added, the ointment will not be too stiff, but will easily admit of being spread on the linen. The best method of preparing this application is not by rubbing the chalk down with the lard; but, having previously reduced the chalk to a very fine powder, heat the lard to a tolerable temperature, and, whilst it continues hot, gradually add the levigated chalk in the same vessel in which the lard was warmed. By this means it forms more of a solution than a mere addition; and the two ingredients thus become more intimately blended together. This should be stirred until it is nearly cold, and then placed by for use. I have found that preparing the ointment in this manner is preferable to the more usual mode of making such substances, by simple admixture or trituration, as it produces a mass more homogeneous, containing less of the earthy particles in a distinct or separate form. I have for several years past been in the habit of using very extensively an application thus prepared, and have watched very closely its effects.

* * * *

"It is scarcely necessary to remark, that these observations apply with undiminished force to all wounds and ulcerations, on whatever place of the body they may be situated. The employment of the chalk ointment is not restricted to sores on the leg, but may be advantageously extended to those which occur on other parts of the surface. It is particularly serviceable in all cases where we are anxious to bring about as speedily as possible the healing process. I have had recourse to it, with very great advantage, in the treatment of burns and scalds, where an extensive surface is exposed, and requires either the natural crust, or some artificial protection resembling it. Another instance in which I have found it of very essential benefit is, when a blister has been applied to a very young child, and the vesicated part shews no disposition to heal. Every one must have observed this to have taken place; and probably there are very few medical men who have not once, at least, been mortified and grieved, to find that the sore, instead of healing, has, by its irritation, absolutely destroyed the child. In all such ulcerations, the chalk ointment is particularly useful. It allays the excitability of the sore, forms a crust over the exposed surface, and thus protecting it, hastens onward the natural process of cure."

The fulfilment of the second indication—that of introducing a healthy action—is still more simple, and may be comprised in the single word—pressure; so that the chalk ointment, and "powerful and well-adjusted compression," make up the sum of the treatment. We shall, in conclusion, allow Mr. Spender to describe his mode of proceeding in his own words:—

"The first thing is, to cover the surface and sides of the sore for some distance beyond its edges with the chalk ointment, spread about the thickness of a wafer on thin linen. I think the linen is preferable to lint, as it seems to allow the disengagement of the chalk more readily. No compresses of any sort are placed on this, as I am convinced the frequent use of paddings of linen, calico, and the like, placed between the dress-

ing and the roller, are prejudicial, by unnecessarily loading and heating the part, and by confining, or preventing, the escape of the matter. They are injurious, also, by interfering with the regular operation of compression; because, if the bandage is applied tightly all round the limb, which ought to be done, the ulcer is pressed beyond its proper share. It is like driving in one of the parts of the superficies of a cylinder; it is depressing the ulcer more than the other portions of the limb just to the extent of the thickness of the paddings; and thus, if the compression be sufficiently powerful, it is not only unequal, but bears too much on the ulcerated part. The pledgets made of tow are, I think, also objectionable on much the same principle. These are generally thicker in the middle than at their margins, resembling in figure a sort of double convex. The consequence is, that the centre presses more powerfully than the sides, and the face of the ulcer is driven in more than its edges; when, generally speaking, it is the margins of the ulcer which demand the greatest pressure. Thus, then, without the addition of all compresses and paddings, and in preference to all pledgets made of tow, a single piece of linen, containing a spreading of the chalk ointment, is placed over the centre and sides of the sore. By using this simple unencumbered dressing, in addition to the advantage of obtaining more quickly the chalky crust, all the evils just adverted to are completely avoided. The ulcerated part is not heated nor overloaded; the matter can more freely escape; the face and margins of the ulcer admit of a more equal pressure; first, amongst themselves, and, secondly, in relation to the general outline of the limb. If the edges of the sore are too high, they are brought down; and if the granulations are too prominent, they are depressed by the application of compression upon this flat and even dressing.

"The advantage derived from the bandage does not, as I have already attempted to prove, arise from the local levelling of the sore only, but from the general support and assistance which are given to the structures of the limb. Thick compresses of linen, plates of lead, and the like, placed over the ulcer, or on a varicose vein, may, therefore, do harm, by acting as an obstacle to the circulation of the inferior parts of the limb. Any thing approaching to the nature of a wedge becomes improper; and instead of adopting these local expedients, we should be very careful that every portion of the limb, from the toes to the knee, be equally and evenly compressed. For this reason, an objection might not unfrequently be advanced against the adhesive plaister. The portion of the limb included within the strappings is compressed so much more tightly than the parts below and above it, that I have sometimes seen both edges of the plaisters girting round the skin as completely as if the integuments had been cut, and considerable inflammation and partial ulceration have been the consequences.

"The face of the sore, and the surrounding integuments for some little distance, as well as any other portions of the skin which happen to be excoriated, being covered with a thin linen dressing of the chalk ointment, the next stage of proceeding consists in the application of the bandage. This is useful, in the non-varicose class, to retain the dressings, in order to form the incrustation, as well as to counteract any ill effects of the dependent position of the limb during the period of granulation; but in the varicose ulcers, in addition to these advantages, it is *indispensably necessary*, for the purpose of altering the condition of the structures underneath. In the latter cases, compression is of such absolute and unequalled importance, that without it every thing else will be comparatively ineffectual. For although the chalk ointment may form its crust, by simply being applied and renewed over the surface and edges of the sore, yet this alone will be productive of only the least half of the benefits of the treatment, so long as the subjacent structures remain varicose or swollen. The simple kind of wound, or non-varicose ulcer, will, indeed, commonly heal, and the cicatrix may remain sound without the aid of the roller; but the varicose kind will proceed but slowly, if at all, without its employment; and, even if it should thus get well, is extremely apt to break out again, either spontaneously, or from the most insignificant cause. The advantage of each remedy is greatly increased by the co-operation of the other; it is like some compounds in che-

mistry, endowed with important properties which neither of their elements possessed alone.

"The necessity and advantage of compression in the treatment of the varicose sores being so great, the rapidity and completeness of the cure will very much depend on the manner in which it is employed. *Except it be properly used*, any surgeon who may feel disposed to give the method I am recommending a trial, will probably be disappointed in its result; but then the failure should be fastened neither on me, nor on the plan, but ought to be imputed to the incomplete mode in which the attempt has been made."

The exceptions to the treatment above described are, extremely deep, callous sores, and highly irritable, and specific sores.

In a concluding chapter Mr. Spender combats the commonly-received opinion, that danger is apt to accrue from healing up old ulcers: he has never been able to trace any thing of the kind in more than "about one case in fifty;" and even then, he says, the evil may be avoided by due attention to the bowels in the way of purging. We recommend the volume to attention. The author's views, if not absolutely novel, are at least adduced with an air of originality and freshness, and are calculated to simplify practice, by lessening the mischiefs of "meddlesome surgery."

A History of British Fishes. By William Yarrell, F.L.S. Illustrated by Woodcuts of all the Species, and numerous Vignettes. Part I.

Those interested in the subject of this work will find it executed in a manner calculated to secure their approbation. The woodcuts are very prettily done, the descriptions good, and the letter-press concise and satisfactory.

The Marriage Almanack; or Ladies' Perpetual Calendar. From the German of Dr. Desberger, of Erfurt. with Additions. 32mo.

This little lady's-book is quite within our province: it treats of matters, medical and hygienic, principally relating to the pregnant state. Its chief object seems to be to facilitate the calculation of the time of pregnancy; and, used for this purpose, we imagine it may prove serviceable to many females who make sad blunders in their reckoning, to the great vexation both of themselves and their obstetrical attendants. Accoucheurs could not do better than recommend it to ladies on their lists. It is very beautifully got up; the tables are clear and intelligible, and the short remarks are sufficiently practical. Sir Charles Clarke, we perceive, has permitted the work to be dedicated to him.

MEDICAL GAZETTE.

Saturday, March 28, 1835.

"Licet omnibus, licet etiam mihi, dignitatem *Artis Medicæ* tueri; potestas modo veniendi in publicum sit, dicendi periculum non recuso."

Cicero.

OPERATIONS FORCIBLY PERFORMED.

RESPONSIBILITY OF SURGEONS.

We give, in the present number, a report of the trial which took place last week in the Brenchley case. The facts were clearly made out, and no man on perusing them can possibly say that the result ought to be different from what it has been. The surgeon stands convicted of a misdemeanor, and certainly the circumstances strike us as being of an aggravated character. A lad of 15, a pauper in the Brenchley workhouse, is a martyr to stone: he has been operated on ineffectually a year ago by a particular surgeon; and when now he wishes to be treated by other hands, and has made every arrangement for the purpose, with the concurrence of the overseers of the parish, his former attendant, by stratagem and force, seizes him, and performs the operation of lithotomy upon him. Upon the motive of the surgeon who did this we cast no imputation of a criminal kind: he acted, no doubt, with the greatest zeal and anxiety to save his reputation: he

might have even been persuaded that the boy would be safer in his hands than in those of the rival whose interference he dreaded; but we must say that he conducted himself with extreme indiscretion, and with a degree of violence wholly unwarrantable by any law, written or implied. There was novelty in the case, it is true,—force being rendered accessary to the accomplishment of an ostensibly benevolent object; but there could scarcely be two opinions entertained regarding the propriety of *such* means being adopted for the attainment of any end, however good. The judge's view of the matter was clear, and such as must have occurred to any reflecting man—namely, that an *assault* was committed when the surgeon had recourse to a *forcible* operation.

But the view that ought to be taken of this case rests not here. Let us suppose that the operation had terminated fatally: suppose some unfortunate slip of the knife had led to irremediable mischief; or that any of the accidents which not unfrequently attend lithotomy had occurred; what would then have been the awful situation of the surgeon? Would not the charge of manslaughter, or something more serious, have taken the place of simple assault in the indictment? in short, would not the operator's life have been in jeopardy? How narrow, then, has been his escape!

The truth seems to be (and we have over and over again had occasion to proclaim it in this journal, by way of warning), that there are but too many surgeons who are incautious as to the circumstances under which they undertake certain operations. They forget that their profession, though they may have attained it in the most legitimate and honourable mode, does not render them irresponsible: they even go so far as to fancy that they do certain things by right, which, in reality, they are only allowed to do by sufferance, or the legal penalties for which they perhaps barely escape by connivance. They do not sufficiently consider, that there is no privilege of immunity attached to the practice of surgery or medicine in this country, and that in case of being proceeded against, for any unlucky event that has happened through their means, their good intentions alone are their protection: the law fortunately leaves them this single loop-hole, and, from the highest to the lowest, there is no other general plea available in their behalf.

It is painful to reflect on the catastrophes that have occurred, from time to time, through neglect of these simple considerations. Not so very long ago, we remember that the Cæsarean operation was attempted on a living woman, in a parish workhouse, and in circumstances which called forth the strongest expressions of censure and condemnation from a coroner and his jury, assisted in their judgment by the evidence of respectable professional witnesses. We fear that workhouses generally, in various parts of the country, are the scenes of more unwarrantable experiments than the public or the profession have any adequate idea of. At all events, we more than suspect that the Brenchley case is far from being singular, in any other regard than in its details and its detection.

A notorious contemporary of ours amuses us not a little by his special pleading, on a question of his own raising, and on which any tyro could give him a sufficient answer. His solicitude is to us perfectly intelligible, when he attempts to argue that it is *justifiable*, under certain circumstances, to perform forcible operations; leaving those circumstances amply wide to comprehend the awkward predicaments into which certain friends of his some-

times throw themselves. It would be very convenient, certainly, if it could be proved to be justifiable, now and then to operate on an unwilling patient, in order to display dexterity in supplying a mutilation, or remedying a deformity — such as the want of a nose; but it would be more to the purpose, perhaps, if it could be shewn to be consistent with the law of the land, or even with the respect due to society. Every body knows, save those who are stupidly or wilfully ignorant, that it is *not* justifiable, *in point of law*, to perform a surgical operation on any person against his consent. Where the person is not recognized as capable of giving consent, as in the case of unsoundness of mind, or of minority, the proceeding is, of course, understood to be modified according to the particular circumstances. We are only sorry that our worthy contemporary, before he wrote so zealously about justifiability, did not take a little more pains to get acquainted with the simple *law* of the case: even at the moment of his writing and puzzling his brains about the matter, the learned judge who tried the Brenchley question had already decided upon it, but, unluckily, not quite in accordance with the *learned* editor's notions.

One word more in relation to this subject. Some short time since the conscientious journalist just alluded to expressed much virtuous indignation at certain remarks of ours on the case of poisoning with arsenic which was recently investigated at Bristol: we had prejudged the case, forsooth, and had broken through all the rules of propriety and justice. It happened, however, that we had then before us the *evidence*, as given in the said case, and confirmed by the finding of the coroner's jury; we took care, besides, to be most guarded in attributing any culpability to the accused not warranted by the depositions of the witnesses. Could we have followed a similar course with respect to t e Brenchley affair, we should have done so; but we had no evidence before us, nothing more authentic than rumours and *ex parte* statements, in which no credit could be reposed. We therefore determined to abstain from any comment on the transaction, and religiously observed our expressed purpose, till now that the report of the trial comes before us in an official shape. Not so our honest contemporary. The exaggerated story of the Brenchley proceedings was too tempting a morsel for his appetite; he swallowed it with avidity, and has ever since been chewing the cud upon it with evident satisfaction to himself. All this time, too, be it observed, he could affect a disregard for another morsel equally rich, and of similar flavour,—one which any body else, less partial to such game, might have readily "*nosed*," as Hamlet says; but it was in his friends' dish, and therefore he has considered it sacred. How we do love this *honourable* consistency and nice fastidiousness of taste!

HOMŒOPATHY DISPOSED OF BY THE FRENCH ACADEMY OF MEDICINE.

A SHORT time since we mentioned that a petition which had been presented to the Minister of Public Instruction by certain Hahnemannians in Paris, had been referred by that functionary to the Académie de Médecine. The question was, whether the petitioners should be allowed to open a homœopathic hospital, or dispensary, in the French metropolis; and the answer now given is sufficiently decisive. We extract from the report of the proceedings of the Academy on the 17th instant, the following minutes:—

M. ANDRAL, one of the commission, came forward to give his opinion, and was listened to with deep attention. He said he was decidedly opposed to the

project of allowing the homœopaths a dispensary: humanity should not be trifled with by the experiments of these people. He had given their system a fair trial; he had treated above 130 or 140 patients homœopathically, in presence of the Hahnemannians themselves. M. Guibourt had prepared the medicines; and every requisite care and precaution were duly observed: yet in not one instance was he successful. He had tried various experiments on his own person, and several other professional friends had followed his example, in order to ascertain the actual effects of the homœopathic doses; but the results were not as Hahnemann and his disciples described them. He (M. Andral) had taken quinine in the prescribed globules, but had contracted no intermittent fever; he had taken aconite, but without being affected with symptoms of plethora; sulphur he took, to try if he should catch the itch, but he caught nothing; neither, upon swallowing certain globules of arnica, did he feel pains as if he had suffered contusion: and so with various other substances which he and his friends took, in obedience to the Hahnemannian precepts. With respect to the attempt to cure disease by this method, he said that in every instance he was obliged to return to allopathy, inasmuch as under the homœopathic treatment the symptoms went on from bad to worse. *(Applause.)*

M. Piorry showed the absurdity of homœopathy, in pretending to overlook the seat of the disorder: for example, in pneumonia, only recognizing spitting of blood, certain pains, &c. Some had said that homœopathy at all events could do no harm, as it might be considered merely as the medicine of expectation; but he begged to remind them, that that method was far from being suited to all cases, nay, in many was absolutely injurious. He suggested that the negative of the Academy should be expressed in strong terms.

M. Bally said that he had given permission to MM. Curie and Simon to treat patients homœopathically in his wards; they had done so for four or five months; a register was kept, and the result was that *not one* of a large number of patients was cured by the Hahnemannian method. He was of opinion that the refusal of the Academy ought to be strongly expressed.

MM. Adelon, Itard, Double, Rochoux, Bouillaud, Desgenettes, and other members, spoke to the same effect; and the discussion closed by the unanimous adoption of a decided reply to the Minister in the negative. "Repos aux homœopathes!" as M. Desgenettes said, in concluding his pithy remarks.

CONCOURS AT MONTPELLIER.

The interesting concours for the Chair of Legal Medicine at Montpellier has just closed, by the appointment of M. le Dr. René to the office. There were eleven candidates altogether; and the display is said to have been unusually brilliant.

CHARTER TO LONDON UNIVERSITY.

Mr. Tooke's motion for an address from the House of Commons, praying his Majesty to bestow a charter on the London University, was last night carried by a large majority. The charter is *not* to convey the power of conferring degrees in medicine. Even the most strenuous advocates of the establishment have had the good sense to yield to the force of argument brought against them on this point. Lord John Russell, in answer to Sir Robert Peel and Mr. Baring, observed—"The Right Honourable Baronet and the Honourable Gentleman, the President of the Board of Trade, had both referred to what had taken place on this subject before the Privy Council. Now he was one of those who sat on the occasion in the Council, and he had heard the arguments on both sides. Grave objections, he confessed, were urged against granting *medical* degrees,—not so much, however, by the universities as by the medical schools of London, on whose part it was proved that there were several that could confer medical degrees as well—if not better—than the London University; and he thought that the other schools of London would be entitled to confer medical degrees, if that power was given to the University of London; and he (Lord John Russell) was not of opinion that the University of London should be allowed to confer medical degrees."

PROSECUTION AND CONVICTION FOR FORCIBLE SURGERY.

Maidstone Assizes, Wednesday, March 18.
(Before Mr. Justice GASELEE.)

THE KING *v.* MONCKTON.

This was an indictment against Jonathan Monckton, a surgeon at Brenchley, and the Rev. Nathaniel Harpur Arthy, charging them with committing an assault upon James Roberts, a pauper in Brenchley workhouse, about 15 years old. Mr. Arthy traversed the indictment until next assizes, but Mr. Monckton pleaded and took his trial. The assault complained of was the performance of an operation upon Roberts by the defendant Monckton, who was the surgeon of the workhouse, contrary to the will of Roberts, of his parents, and of the overseers.

Mr. Serjeant Andrews stated the case, and called

James Roberts, who was examined by Mr. Walsh.—Witness had been afflicted with stone for more than five years. About a year ago he had been operated upon by Mr. Monckton, but he was not cured. He grew worse in the beginning of this year. Mr. Russell, the master of the workhouse, took him to Mr. Hargrave, a surgeon at Tunbridge Wells, on Friday, the 6th of February last. Hargrave saw him, examined him, and gave him some medicines, and appointed him to come again the following Friday, when an operation was to be performed. Witness agreed to do so. The next day he met the defendant Monckton, who was on horseback. Monckton asked what Hargrave had done to him? Witness told him, that he was to go again on Friday. Monckton asked why witness did not let him do it. Witness answered he was afraid Monckton would do it, as he had done it before. Monckton said he would have made a man of witness, if he had come before. On the following Thursday (the day before the intended operation by Hargrave) witness was in the kitchen in the poorhouse, when Russell told him that Arthy wanted him in the committee-room. Arthy was a resident in, but not the clergyman of, the parish. Witness went to the door of the room, and saw both Monckton and Arthy, and the table out in the middle of the room with instruments upon it. On this he stepped back, but Monckton caught hold of him and pulled him in, although he held by the door-post. Witness told him "he was not to do it, he did not dare do it; Mr. Joy (the overseer) had said he was not to do it. His own father had said he was not to do it; he was to go the next day to Mr. Hargrave." Mr. Russell, who was in the room, said he would have no more to do with it. Monckton said he did not wish him to stay, but he desired him to go to the surgery, for he had got four men there to help him. Monckton then told witness to pull off his shoes, but he refused. Four men, servants of Monckton and Arthy, came in; witness resisted them, but they took off his shoes and trousers, and laid him on the table, one man holding each leg, and one man holding each arm. Witness made what resistance he could, and cried and lamented very much, but did not holloa out. (Witness then detailed the operation.)

Cross-examined by Mr. Bodkin.—He had been five years labouring under the disease, which was very painful, and prevented his working. Monckton attended his family when they were ill with the typhus fever. He had heard there was a new plan of extracting the stone without cutting, which Mr. Hargrave practised, and which did not cause so much pain. No surgeon had examined him since. A little piece of a stone about the size of a pea was got out, and the wound was quite healed in a fortnight.

Mr. Russell, the master of the workhouse, said he went with the boy to Mr. Hargrave, by order of Joy and Venness, the overseers. The boy agreed to go again on the next Friday, to have the operation performed by Hargrave. When Monckton came to the workouse on the Thursday, the boy stood at the door crying, and said, "You are not to do it, but Mr. Hargrave." Witness also told Monckton that the boy was to go on the morrow to Mr. Hargrave. Monckton made no reply, but caught hold of the boy and pulled him into the room. They desired witness to call the four men.

Joseph Moon, a pauper.—Heard Roberts cry out, "You must not do it; you shall not do it; Mr. Joy says you are not to do it; Mr. Hargrave is to do it."

George Joy, the overseer, said the boy was getting worse, and his mother had expressed a wish that some other doctor should do the operation, and he promised to attend to her request. Witness and his brother overseer sent the boy to Mr. Hargrave's.

Cross-examined by Mr. Deedes.—Monckton manifested great anxiety about the boy. After the first operation, he said he should never be happy until he had taken away the stone. It was Monckton's duty to attend all sick and diseased persons in the workhouse.

Mr. Bodkin desired his Lordship's opinion upon the law of the case.

Mr. Justice Gaselee said it was a new case, but he had no doubt about it; the

persisting to perform the operation against consent, was anassault.

Mr. Bodkin then addressed the jury for the defendant; and called Mr. John Price and Mr. Richard Webb, surgeons, who gave the defendant a most excellent character for skill, humanity, and benevolence. Mr. Parton, a miller, whose family the defendant had attended, and the officiating clergyman of Brenchley, also spoke in the highest terms of the defendant, and of his great feeling towards the poor. The latter gentleman stated, that the defendant had been vilely calumniated and slandered.

Mr. Justice Gaselee said, whatever verdict the jury might give, no gentleman could go out of court with a better character for skill and humanity. The question was, whether the operation was performed without the consent of the overseers, without the consent of the boy, and without the consent of his father. The father had not been called. It was an important case, and he was not aware that the question had ever before arisen. If the defendant had mistaken the law, his character and honour would not suffer.

The jury immediately found the defendant *Guilty*.

Mr. Walsh said there was no desire to press for punishment, and, after some discussion, the defendant was allowed to depart, upon entering into his own recognizance to appear when called upon to receive judgment.

STATISTICAL SOCIETY.

Monday, March 16, 1835.

Anniversary Meeting.

The anniversary meeting, numerously attended, took place this day; the Marquis of Lansdowne, President, in the chair. From the report of the Council, it appears that the number of Fellows at present belonging to the society is 398; and perhaps no other scientific body could exhibit so large a list in the first year of its formation. The death of Mr. Malthus was mentioned in the report, as an event deeply to be regretted: this gentleman having been one of the principal founders of the society, and whose name it was hoped would long confer a distinguished lustre upon it. No foreign associates, with the exception of M. Quetelet, have yet been elected; nor is it intended to admit any until the state of the society shall have been further matured. Various provincial statistical societies have either been formed, or are on the point of formation, in different parts of the kingdom. The financial affairs are in a very flourishing condition: up to the 31st of December last there was a clear balance in the hands of the treasurer (all expenses paid) of 715*l.* 19*s.* 2*d.*, which, with the outstanding subscriptions on account of 1834, would leave the assets, at the close of last year, 867*l.* 3*s.* 2*d.*

Mr. Drinkwater proposed three or four changes in the regulations of the society, chiefly affecting the mode of admission, which were carried; after which a vote of thanks to the noble President being acknowledged in a neat speech, the meeting adjourned.

Statistics of Spain.

In the evening one of the ordinary monthly meetings was held,—Lieut.-Col. Sykes, Vice-President, in the chair,—when an abstract from a new work, by M. Moreau de Jonnes, on the *Statistics of Spain*, was read. From this elaborate document we learn that the population of Spain, together with the Balearic isles, amounts to 14,660,000—that is, 850 inhabitants to the square league: including the colonies, (namely, the Canary and Phillipine islands, Cuba, Porto Rico, and the settlements on the African coast), the number of subjects of the King of Spain should be 18,245,000, or 500 to the square league. Spain, in 1723, contained only about seven millions and a half of inhabitants; so that it has nearly doubled itself since. The rate of increase, however, of late years, seems to be much higher: from 1803 to 1826, a period of 23 years, the increase has amounted to 3,361,000 souls, showing an advance of 30 per cent. on the previous population; according to which rate the period of doubling would not exceed 60 years. The agricultural returns show that Spain has latterly been prospering very conspicuously.

With regard to the mode of living of the people of Spain, one fact may be mentioned. The annual consumption of meat throughout that kingdom is not more than 22 lbs. for each inhabitant. Now in France, be it observed, the consumption of meat is 36 lbs. for each individual, and in Paris 86 lbs.; while in Great Britain the annual consumption is 92 lbs., and in London 143 lbs. for each inhabitant—that is to say, above six times as much meat is used by a Londoner as by a native of Spain!

Public instruction is more neglected in Spain than in any other European country—Russia alone excepted. The census of 1823 gave only 29,900 students for the whole kingdom, which is but 1 for every 346 of the inhabitants; and if the same ratio be still preserved, it follows that there are in Spain only 40,000 children receiving instruction, while there are a million and a half of souls of an age to require it: in other words, only 1 child in every 35 in that country receives the benefit of an early education.

ANNUAL METEOROLOGICAL REPORT FOR THE YEAR 1834,

Kept at EDMONTON, HIGH WYCOMBE, *and* CHELTENHAM.

EDMONTON.

Month.	THERMOMETER. Highest	Lowest.	Mean.	Range.	BAROMETER. Highest	Lowest.	Mean.	Range.	RAIN. Inches.	WINDS. N.	S.	E.	W.	N.E.	S.E.	N.W.	S.W
January...	55	29	44·13	26	30·28	29·08	29·6401	1·20	3·00	1	3	..	2	..	..	3	22
February .	53	22	40·82	31	30.35	29·67	30·0506	·68	·55	..	3	2	1	1	2	1	18
March	57	24	44·99	33	30·48	29 47	30·1785	1·01	·45	1	2½	1	2	6	2	3	13½
April	65	24	46·97	41	30·46	29 30	30 1734	1·16	·875	4	3½	2	..	12	4½	3	1
May	75	35	59·39	40	30·38	29 36	29·98·0	1·02	1·275	2	5	½	2	9½	..	2½	9½
June	85	39	60·49	46	30·29	29·47	29·8778	·82	1·55	2	2	1	1½	5½	2	..	16
July.....	87	47	61·08	40	30·23	29·43	29 8495	·80	4·35	2	2½	1½	..	8	1	1½	14½
August....	82	40	64·05	42	30·16	29·50	29·8038	·66	2·775	2	3	..	1½	2½	1	7½	13½
September.	75	39	57·01	36	30·29	29 37	30 0121	·92	1·35	6	3	½	6	3	3	..	8½
October...	74	32	51·22	42	30·54	29·26	29·9791	1·28	4·75	2	1	..	5½	3½	..	7	12
November.	63	26	43·81	37	30·33	29·35	29·8514	98	1·525	3	5	1	3	10	..	3	5
December.	57	22	40·64	35	30·51	29 16	30 1978	1·35	1·625	7½	1	½	2½	5	1½	3	10
Year	87	22	51·22	65	30·54	29·08	29·8842	1·46	23.475	32½	34½	10	27	66	17	34½	143½

HIGH WYCOMBE.—KEPT BY A MEMBER OF THE LONDON METEOROLOGICAL SOCIETY.

January...	54·25	28	42·32056	26·25	30·13	28·81	29 47032	1·32	3·53125	..	2	..	6	1	7	2	13
February..	53	22	38·4375	31	30·24	29·37	29 88880	·87	0·81125	2	3	3	7	..	3	2	8
March	59	23·25	42·76612	35·75	30·28	29·28	29·94957	1·	0 60625	1	1	5	9	2	..	4	9
April.....	65·50	24·75	44·17083	40·75	30·20	29·02	29·91177	1·18	0·4375	8	1	6	..	3	3	7	2
May	77	32	53·73387	45	30·22	29·10	29·77516	1·12	0 7625	5	8	7	4	1	2	2	2
June	82	34	56·97083	48	30·12	29·28	29 741	·84	1·86825	4	10	..	5	2	1	1	7
July	88 50	44	61 10887	44·50	30·.5	29·23	29 71032	·82	7·0.625	1	4	2	4	8	6	4	2
August....	85	36	61·49395	49	29·93	29·32	29 63935	·61	2·46875	6	5	1	2	2	6	3	6
September.	78·50	34	55·46875	44·50	30·24	29 19	29 82077	1·05	2·09375	5	6	7	4	1	3	2	2
October...	71·50	29 25	47·54032	42·25	30·38	29 05	29·79483	1·33	1·175	4	8	3	5	1	1	6	3
November.	60·75	26	41·1375	34·75	30 18	29·00	29 68188	1·18	2·35	6	5	4	1	4	1	5	4
December.	52	24	37·91125	28	30 35	28·98	30 03709	1·37	0·78125	5	5	2	5	3	1	8	2
Year	88 50	22	48·58835	39·14	30 38	28·81	29 78507	1·05	23 892	47	58	40	52	28	34	46	60

CHELTENHAM.—KEPT BY MR. SAMUEL MOSS.

January...	57·5	35 0	47·145	22·5	30 13	28·91	29·602	1·22	5·11	1	9	..	2½	1	2½	2	13
February ..	52 5	32·0	43·17	20·5	30·16	29·47	29·815	·69	1 105	..	4½	½	5½	..	5½	½	11½
March	56·0	30·0	45·4	25·0	30 26	29·31	29 923	·95	·95	2½	4½	2½	3½	3½	1½	½	12½
April.....	61·0	33·0	46 63	28·0	30·15	29 14	29 876	1·01	·96	1	2½	7	½	8	5	3	3
May	69 0	43·5	56·2	25·5	30·12	29·15	29·752	·97	1·05	1	4	2½	2½	5½	2	½	13
June	77·0	45·0	59 125	32 0	30 04	29·38	29 69	·66	2 325	½	4	1½	4	½	1	4	1 ½
July	78·5	51 0	61·76	27 5	29·97	29·30	29·672	·67	9·6	..	4	3½	3	5½	6	2	7
August	77·5	44 0	59·976	33·5	29·97	29 35	29 645	·62	3 61	½	4	..	3½	6	2	2	13
September .	72·5	46·0	58·392	26·5	30·46	29·42	30·064	1·04	3 255	..	3½	1½	2	..	13	..	10
October....	69 0	33·5	50·742	35.5	30·57	29·42	30·0 5	1·15	·435	5½	4½	..	2½	..	4	7	7½
November..	60·5	31·0	43·57	29·5	30·44	29·32	29 954	1 12	1·91	5	4	2	1	9	2½	1	5½
December.	55·5	31·5	41·69	24·0	30 42	29·33	30·105	1·09	1·12	3½	5	2	4½	6½	3½	..	6
Year.....	78·5	30·0	51 983	48·5	30·57	28 91	29 843	1·66	31·50	20½	53½	23	35	45½	48½	22½	116½

GENERAL OBSERVATIONS.

THE mode of keeping these registers is as follows:—

At *Edmonton*, the warmth of the day is observed by means of a thermometer exposed to the north in the shade, standing about four feet above the surface of the ground; the extreme cold of the night is ascertained by a horizontal self-registering thermometer, in a similar situation. The daily range of the thermometer and barometer is known from observations made at intervals of four hours each, from eight in the morning till the same time in the evening. The weather and direction of the wind are the result of the most frequent observations. The rain is measured every morning at eight o'clock.

At *Wycombe*, the thermometer and barometer are registered at eight A.M., at three and ten P.M.; the extreme cold is ascertained by a self-registering thermometer. The wind is the result of the most frequent observations.

At *Cheltenham*, the temperature is ascertained by a horizontal self-registering thermometer, suspended about five feet from the ground, in a north-east aspect; and the observation made at eight o'clock A.M. The pressure of the atmosphere, and the direction of the winds, are registered at eight o'clock A.M., and eight o'clock P.M. The quantity of rain which has fallen is registered at eight o'clock A.M.

CHARLES HENRY ADAMS.

A GENERAL STATEMENT

OF

THE BAPTISMS AND BURIALS,

In the Parish of SAINT LUKE, CHELSEA, *during the Year* 1834.

BAPTISMS.

At St. Luke's Church.

Males, 360; Females, 412.—Total, 772.

At Trinity Church.

Males, 77; Females, 78.—Total, 155.

Comparison with the preceding Year:—

1833.—Males, 496; Females, 479—Total, 975. | 1834.—Males, 437; Females, 490—Total, 927.

Giving a decrease of 59 Males, and an increase of 11 Females; total decrease, 48.

BURIALS.

	Under 2 years of Age.	2 to 5	5 to 10	10 to 20	20 to 30	30 to 40	40 to 50	50 to 60	60 to 70	70 to 80	80 to 90	90 to 100	Total of each Month.	Comparison with the corresponding months of 1833. Total	Increase	Decrease.
January	17	3	3	1	6	1	10	8	7	2	5	0	63	86	0	23
February ...	12	7	4	2	3	2	4	7	6	4	4	1	56	57	0	1
March	12	9	4	2	1	4	6	4	10	9	0	0	61	89	0	28
April	21	7	1	2	4	8	3	3	6	8	3	1	67	133	0	66
May	18	9	4	4	11	6	10	8	4	2	3	0	79	127	0	48
June	12	13	3	4	1	8	4	2	4	9	2	0	62	59	3	0
July	24	8	1	4	4	4	5	5	3	5	5	0	68	85	0	17
August	20	9	9	7	9	12	10	9	12	9	8	2	116	139	0	23
September..	13	5	8	2	2	14	11	5	8	7	1	0	76	58	18	0
October	12	5	6	1	8	7	7	6	3	6	5	0	66	61	5	0
November ..	13	5	1	1	9	2	4	2	12	8	6	0	63	49	14	0
December ..	23	9	3	2	7	2	6	2	3	6	9	3	75	54	21	0
Total of the respective ages	197	89	47	32	65	70	80	61	78	75	51	7	852	997	61	206

Comparison with the corresponding Ages, during the Year 1833.

	237	106	38	35	67	69	95	95	112	95	41	7	997
Increase	0	0	9	0	0	1	0	0	0	0	10	0	20
Decrease....	40	17	0	3	2	0	15	34	34	20	0	0	165

BURIED.

In 1833	997
In 1834	852
Decrease	145

Decrease, 145

Of the above Number, there were buried in

1833.—Males, 492; Females, 505. Total 597 | 1834.—Males, 417; Females, 435. Total, 852.

N.B. The above statement of Burials refers to the entire Parish; those which take place in the Royal Hospital, the Jews' and the Moravian Burial Grounds, excepted.

Decrease in the number of Burials in 1834, compared with 1833—145; compared with 1832—201.

DISEASES, CASUALTIES, &c. during the Year 1834.

Abscess	3	Dropsy (general)	34	Ossification of the Heart	1
Accidents (various)	16	Enlargement of the Heart	5	Paralysis	4
Aphtha, or Thrush	4	Epilepsy	3	Parturition, or Childbirth	3
Ague	1	Erysipelas, or St. Anthony's Fire	2	Pleurisy	2
Apoplexy	13	Fevers (various)	37	Quinsey	3
Asthma	44	Hernia	2	Rubeola, or Measles	27
Cancer	4	Hooping Cough	13	Rupture of Blood Vessel	4
Cholera Morbus	89	Hydrocephalus, or Water on the Brain	37	Senility, or Old Age	82
Consumption, or Decline	179	Hydrothorax, or Water on the Chest	11	Suicide	1
Convulsions	41	Inflammation	107	Tumors and Ulcers	5
Croup	4	Jaundice	2	Variola, or Small-Pox	11
Dentition, or Teething	31	Lunacy	2	Unknown Causes	12
Diarrhœa	2	Mortification	4		852
Disease of the Heart	2				
Disease of the Liver	5				

BAPTISMS and BURIALS in the CITIES of LONDON and WESTMINSTER, and the BILLS of MORTALITY, for the Year ending December 9, 1834.

BAPTISMS.—Males, 13,601; Females, 13,615. Total, 27,216. Increase, 126.

BURIALS.—Males, 10,811; Females, 10,868. Total, 2167. Decrease, 4,893.

A GENERAL BILL

OF THE

BURIALS, WITHIN THE CITY OF LONDON, AND BILLS OF MORTALITY,

From Dec. 10, 1833, *to Dec.* 9, 1834.

DISEASES AND CASUALTIES OF THE YEAR.

Diseases.	
Abscess	127
Age and Debility	2333
Apoplexy	360
Asthma	796
Cancer	108
Childbirth	289
Cholera	630
Consumption	3792
Constipation of the Bowels	37
Convulsions	1875
Croup	144
Dentition or Teething	395
Diabetes	5
Diarrhœa	32
Dropsy	836
on the Brain	682
on the Chest	56
Dysentery	10
Epilepsy	23
Erysipelas	51
Fever	497
(Intermittent or Ague)	12
(Scarlet)	523
(Typhus)	90
Fistula	1
Gout	70
Hæmorrhage	38
Heart, diseased	110
Hernia	16
Hooping-cough	602
Hydrophobia	8
Indigestion	8
Inflammation	1723
Bowels&Stomach	347
Brain	207
Lungs and Pleura	375
Influenza	9
Insanity	170
Jaundice	54
Jaw, locked	8
Liver, diseased	287
Measles	528
Miscarriage	19
Mortification	225
Paralysis	158
Rheumatism	24
Scrofula	19
Small-pox	334
Sore Throat and Quinsey	35
Spasm	88
Stone and Gravel	21
Stricture	7
Thrush	90
Tumor	27
Venereal	11
Worms	5
Unknown Causes	948
Stillborn	1009
Casualties.	
Drowned	125
Died by Visitation of God	38
Excessive Drinking	4
Found Dead	16
Killed by various Accidents	155
Murdered	5
Poisoned	10
Suicides	42

Buried { Males ..... 10,811 / Females .... 10,868 } Total 21,679

Of the number buried were,

Stillborn	1009	40 and under 50	2025
Under 2 years of age	4956	50 and under 60	1979
2 and under 5 years	2044	60 and under 70	1978
5 and under 10	988	70 and under 80	1611
10 and under 20	850	80 and under 90	739
20 and under 30	1520	90 and under 100	86
30 and under 40	1892	100	1
		101	1

Decrease in the burials reported this year, 4898

APOTHECARIES' HALL.

LIST OF GENTLEMEN WHO HAVE RECEIVED CERTIFICATES.

March 26, 1835.

Samuel George Gregory, London.
James Hindle, Norton.
Edward Nolloth.
James Parker, Tonbridge.
Alexander Bridge.

NEW MEDICAL WORKS.

Jornal Medico-Cirurgico e Pharmaceutico de Lisboa, pp. 56. 8vo. [This is the first number of a Portuguese medical journal, brought out last month at Lisbon, under the editorship of Dr. Vianna de Rezende. We shall be glad to hear of its success.]

Table of Medical Botany, for the Use of Students. By J. Barnes.

WEEKLY ACCOUNT OF BURIALS,

From BILLS OF MORTALITY, *March* 24, 1835.

Abscess	1	Gout	4
Age and Debility	54	Heart, diseased	3
Apoplexy	8	Hooping Cough	23
Asthma	37	Inflammation	58
Cancer	1	Bowels & Stomach	5
Childbirth	12	Brain	3
Consumption	80	Lungs and Pleura	6
Constipation of the Bowels	1	Liver, diseased	23
Convulsions	47	Measles	10
Dentition or Teething	5	Mortification	1
Diarrhœa	3	Paralysis	3
Dropsy	19	Small-Pox	4
Dropsy on the Brain	6	Sore Throat and Quinsey	1
Dropsy on the Chest	1	Thrush	1
Fever	9	Tumor	1
Fever, Intermittent, or Ague	1	Unknown Causes	17
Fever, Scarlet	11	Stillborn	21
Fever, Typhus	1		

Increase of Burials, as compared with the preceding week . . . 99

METEOROLOGICAL JOURNAL.

Kept at EDMONTON, *Latitude* 51° 37′ 32″ *N. Longitude* 0° 3′ 51″ W. *of Greenwich.*

March, 1835.	THERMOMETER.	BAROMETER.
Thursday . 19	from 32 to 43	30·11 to 30 17
Friday . . 20	28 45	30·21 30·23
Saturday . 21	38 48	30·24 30·21
Sunday . . 22	39 47	30·21 Stat.
Monday . . 23	37 47	30·21 30·19
Tuesday . . 24	35 48	30·20 30·29
Wednesday 25	30 46	30·40 30·47

Wind variable, N.E. prevailing.

Except the 25th, generally cloudy; rain at times on the 21st, 22d, and 24th.

Rain fallen, ·375 of an inch.

CHARLES HENRY ADAMS.

NOTICES.

Mr. Beamish, of Ramsgate.—The paper on Medical Reform, as we have already said, is unsuited to our pages; and we have only to add, that the author is greatly mistaken if he thinks we could be induced to publish it through any such motive as that by which he attempts to influence us.

We have to apologize to several correspondents whose papers remain over till nex tweek; when we shall commence a new volume.

WILSON & SON, Printers, 57, Skinner-St. London.

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END OF VOL. XV.

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WEISS'S SCREW LITHOTRITE.

J. Weiss respectfully invites the attention of the Medical Profession to the following account of his now perfected invention, "The Screw Lithotrite," and to the subjoined testimonials of its utility and efficiency with which he has been favoured by some of those Professional Gentlemen who have employed it. It is with reluctance that he here alludes to a circumstance personal to himself; but having persevered, at a great expence, in improving the Instrument, which he invented ten years ago, for reducing Calculi in the Bladder, he feels himself compelled to submit to the notice of the Profession and the Public, a statement of an act of gross injustice and piracy. Mr. L'Estrange, Surgeon-Dentist, of Dublin, has lately brought forward an instrument, called a Calculo-Fractor—a clumsy copy of Weiss's Invention—and exhibited it to the Surgeons of London, and Dublin, as his own; although Weiss's Instrument had been previously laid before the Westminster Medical Society, had been published in the different Medical Journals, and repeatedly used with success by several eminent Surgeons. By giving publicity to this circumstance, J. W. hopes to prevent his being unjustly robbed, not only of the advantages he expected to reap from his perseverance, but of what is still more dear to him—the credit of this valuable invention, which has also been pirated in London and Paris. The following are the proofs of the originality of his invention:—

1824. Weiss's Instrument was tried by Sir Benjamin Brodie on a very hard calculus, which it broke, and the pieces separated with so much violence, that he recommended J. W. to make further improvements upon it.

1825. In consequence of this recommendation, J. W. added a spring-saw to the instrument, and published it, with this addition, in his Catalogue of Inventions and Improvements of that year. In the interval between 1825 and 1830, it was shewn to all professional gentlemen who called on him; and was only laid aside in consequence of the demand for the straight drilling instruments of Civiale.

1830. This instrument was shewn, in the presence of Dr. Boyton, to Baron Heurteloup, who soon afterwards substituted the hammer for the screw, and, by injecting the bladder, avoided the evil consequences apprehended by Sir Benjamin

Brodie. He called it his "Percuteur Courbe à Marteau." Previous to this time the Baron had no curved instrument, but always used the straight drilling instrument.

1831. J. W. again published this instrument in the second edition of his Catalogue of Inventions and Improvements.

1832, 15th June, the following statement was made by Mr. Costello before the Academy of Sciences at Paris, and was published in the "Lancet," and other Medical Journals:—

"The curved percussor is not new. Mr. Weiss, of London, made this instrument in 1824. It acts by a screw; Heurteloup's by a process *more violent* and *less safe*, viz. percussion. In Weiss's, pressure is less exerted; if the calculus does not yield, the operator can release it from his grasp. In percussion you have no choice; something must yield,—either the stone or the instrument."

1833, March 23rd, Mr. Costello stated before the Westminster Medical Society—(See "Lancet," of the 30th of March)—

"That it would be dishonest in him not to avow that he had copied from Weiss's Instrument."

November 20th, Sir Benjamin Brodie sent for one of Weiss's screw Lithotrites, and operated successfully with it.

1834, January 3rd, J. W. received the following letter from Sir Benjamin Brodie, with reference to this instrument:—

"At the request of Mr. Weiss, I feel pleasure in stating, that it is now above eight or nine years ago that he showed me a curved instrument which he had invented for crushing the stone by the force of a screw, and with which he broke a very hard calculus that I gave him to try the instrument upon.

"I objected to it at the time, in consequence of the violence with which the pieces of the calculus separated, considering they might injure the bladder, but recommended Mr. Weiss to make some alterations in it, which might make it more fit to be used on the living person.

"B. C. Brodie."

"*London, January*, 1834."

January 25th, Mr. Brodie's clinical remarks on the before-mentioned operations were published in the "London Medical and Surgical Journal," &c., as follows:—

"*Lithotrity.—Mr. Weiss's New Instrument.*

I operated for lithotrity on a patient a few days since; the case was this. A gentleman came to me some time since for my advice; I found that he had some small calculi in the bladder, with inflammation and irritation of its coats, and a discharge of thick ropy mucus; he could not

retain his water, which on being evacuated gave him intolerable pain. I really did not like the appearance of the case at first; it was not fit for Baron Heurteloup's operation, as the bladder would hold no water. I therefore commenced by injecting a weak solution of nitric acid into the bladder, in the proportion of one drop to one ounce, a remedy which I have found very useful in such cases. After using this for a time, I found the patient so far improved, that he was enabled to retain his water for a longer period of time, and I introduced a sound, and again detected the presence of urinary calculi. These had been originally formed by calcareous and earthy matters being deposited in the bladder, which had irritated its coats, and caused the secretion of ropy mucus, which in its turn had facilitated the further deposition of lithic matter, and thus the presence of these calculi was continued. It now, however, became necessary to destroy them; and, for this purpose, I employed an instrument manufactured by Mr. Weiss, of the Strand, and which I consider a very excellent and ingenious one,—it is formed on the same principle as Baron Heurteloup's; but, instead of a hammer, it breaks the calculi down by the force of a screw. It answers very well for soft stones, which they were in the case I allude to; and I suppose it would do the same for hard ones, for its power is very great. Mr. Brodie here referred to another case, somewhat similar to the preceding one, but in which the small calculi had been glued together, forming one large one. With reference to Baron Heurteloup's instrument, Mr. Brodie remarked, that it was a most excellent one, and the most perfect of the kind ever invented; but that, though he had seen many recover very well from the operation with it, he had also known many very nearly die from it; that, although from the bladder being filled with water, much injury to its coats from the broken fragments of calculi striking it was materially prevented, yet that sometimes great irritation and inflammation of the coats of the bladder followed. Mr. Brodie added, that he thought the use of the screw in an instrument preferable to that of a hammer, the former breaking the stone into fragments quite as certainly, and with less violence than the latter.

1834, March 1st—The engraving of the improvement in the Instrument was published in the "Lancet," of this date.

All these statements appeared previous to the publication of Mr. L'Estrange's instrument, which was first mentioned in the "Dublin Journal" of July, 1834: it was tried by Mr. White at the Westminster Hospital, August 30th, when it was found to be too large for the orifice of the urethra, and Weiss's Instrument—*the largest of his three sizes*—was passed instead.—(See "Medical and Surgical Journal," Sept. 6th.)

The priority and efficiency of Weiss's Invention is further attested by the following letters, and also by numerous others from Professional Gentlemen who have repeatedly used the instrument:—

"Sir,—I beg to state that I was in possession of your Screw Lithotrite a considerable time before I had seen that produced by Mr. L'Estrange.—His instrument, although considerably larger than

yours (which I do not consider an improvement, from experience) is, I discover on comparing them, precisely made on the same principle as yours, the first of which was I believe shewn to the Surgeons of this town in the year 1824.

"ANTHONY WHITE,"
"President of the Royal College of Surgeons."

"*Parliament Street, Sep.* 25, 1834."

"14, *Saville Row, October* 7, 1834.

"Sir,—As nearly as I can recollect, it must be between nine and ten years ago since you first shewed me an instrument which you had invented for the purpose of crushing calculi in the cavity of the bladder, by means of a screw; since then you have, from time to time, shewn me various other instruments intended for the same operation, but they have been all founded on the same principle, and, in fact, have been only modifications and improvements of your original invention.

"I have not the smallest doubt that the credit of having first invented an instrument for crushing calculi, by means of a screw, belongs to yourself, and although some persons have followed you in the path which you opened, I do not believe that there are any instruments now made which are so well adapted to this operation as those made by yourself. I am, Sir, your obedient servant,

"B. C. BRODIE."

"To Mr. John Weiss, 62, Strand."

J. Weiss begs leave to point out to the Profession the various points of difference between the Lithotrite invented and perfected by him, and L'Estrange's Spurious Copy.

The copy is more complicated than Weiss's Lithrotrite, which is entire in one piece, while *the copy* is composed of two separate parts. *The copy* requires the use of a stilette to clear it of detritus, Weiss's clears itself; Weiss's can be used by the operator alone, *the copy* requires an assistant to adjust it; Weiss's can be acted upon by the hammer as well as the screw, *the copy* cannot. The *spurious* instrument is necessarily bulky—too much so, as was proved by the trial at the Westminster Hospital, and is moreover objected to in Mr. White's letter; Weiss's is made of three different sizes, the largest of which is smaller than *the copy*, AND YET POSSESSES MORE POWER. The *spurious* instrument allows the fluid to flow from the bladder through the groove for the stilette; Weiss's is water-tight. The novelty so much boasted of by Mr. L'Estrange—the maker of the *pirated* copy—viz. the screw, IS COPIED FROM WEISS'S, except that it is detached; while in Weiss's it forms part of the instrument: this separation of the screw is necessary to the *spurious* copy, as the weight of the screw renders the instrument too clumsy to be introduced; Weiss's Lithotrite COMPLETE weighs only $7\frac{1}{2}$ ounces, while the *spurious* one weighs 17 ounces—the *screw alone* weighing 11 ounces.

In all these essential points, therefore, the pirated copy is inferior

to Weiss's instrument; though it is not at all unlikely that Mr. L'Estrange may avail himself of some of these advantages to improve his copy, for "*ce n'est que le premier pas qui coute.*"

As this comparison may appear to those who have not seen both instruments to rest solely on J. Weiss's opinion, he subjoins the valuable and disinterested testimonials of the Public Writers who have compared the two Instruments, and who are every way qualified to judge of their respective merits. The Editor of the Lancet, in his Journal of November 1st, 1834, alluding to Weiss's communication in defence of his claim to the invention, which appeared in that publication the following week, says—

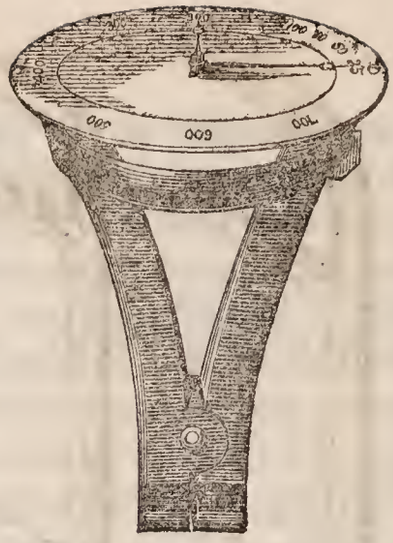
"As plagiarisms are but too common in our profession, to the great injury of able and industrious authors and inventors, we regret that we cannot find space in our present Number for the letter and drawing sent to us by Mr. Weiss, explanatory of the attempt which has been made by a Mr. L'Estrange, of Dublin, to foist on the profession a clumsy alteration of an instrument invented by Mr. Weiss, as an improved piece of invented workmanship and skill. Having seen both instruments we feel no hesitation in declaring that the instrument of Mr. L'Estrange is clumsy, heavy, and complicated, while that of Mr. Weiss is rendered really beautiful by its simplicity, lightness and power." (Vide "Lancet," page 251, vol. 1, 1834-5.)

The Editor of the London Medical and Surgical Journal also states, in reply to a correspondent who addressed him on the subject of the two instruments, that—

"There cannot be a doubt as to the preference. The instrument invented by Weiss is superior to that invented by Mr. L'Estrange in many respects; and we believe any surgeon about to operate would not for a moment, if he compares the two, hesitate in his choice." (Vide "London Medical and Surgical Journal," page 640, December 13th, 1834.)

For this generous support—the more valuable, because it springs from a sense of justice—J. W. feels most grateful, and takes this opportunity of publicly expressing his obligation. In addition to these conclusive testimonies to the superiority of Weiss's Instrument, J. W. feels bound, in self-defence, to state the following facts, which throw a strong light upon the disadvantages belonging to the pirated Instrument. Mr. Crampton, whose certificate Mr. L'Estrange parades on all occasions, has operated with Weiss's Instrument *seven times* since he used L'Estrange's; and in a letter which J. W. has in his possession, and is willing to shew to any one who may wish to see it, it is stated that an eminent Dublin Surgeon was heard to say, with reference to the danger of using the stilette, "that he would as soon introduce a bayonet into a man's bladder as L'Estrange's instrument."

J. W., however, respectfully invites any Gentleman to examine both Instruments for himself, before he purchases either of them, and he has no fear for the result.

WEISS'S  DYNANOMETER.

With the view of making the Lithotrite as complete as possible, J. W. has added a Dynanometer, the dial of which is provided with two hands, the longest shewing the amount of power exerted; the shortest, the greatest force that has been applied. Thus the short or register hand in the Engraving points to 200, shewing that power to the amount of 200lbs. has been exerted.

This will prove a most useful addition to all Lithotritic Instruments, as, by trying the instrument previously, the operator will see the exact amount of force he may apply either with the screw or the hammer, and thus divest himself of all fear of straining or breaking the Instrument during the operation.

DESCRIPTION OF THE PLATE.

Fig. 1 represents the Lithotrite with the blades open to receive the stone—*A* the cross handle, which may be removed at pleasure by loosening the screw *B*; *C* the thumb piece, by which the upper blade is moved backwards or forwards; *D* the fly, which, being turned round, forces the collar *(E)* upon the moveable blade and crushes the stone; *F*, the percussion rod, the flat end of which being struck smartly by the hammer forces the upper blade forward upon the stone.

To apply the Dynanometer, unscrew the nut *G*, take off the collar *E*, and slide the small end into the groove, close to the thumb-piece *C*: the collar and nut are then attached as before. To clean the Instrument, unscrew the nut *G*, and take it to pieces. Before using the Instrument, apply a small quantity of oil to the thread of the screw, and observe that the collar *E* is loose.

Fig. 2 represents the manner of holding the Lithotrite while seizing the stone, the upper blade being moved forward by the thumb.

Fig. 3 represents the Lithotrite as crushing the stone, the cross-handle *A* being held in the left hand, while the fly *D* is turned with the right.

Fig. 4—the Screw Scoop Forceps for removing fragments and small calculi. This Instrument is used in a similar manner to the Lithotrite; it has a flat handle, like a sound, for the greater facility in its management; the blades are made hollow to collect and retain the fragments, and are sufficiently strong to break such fragments or calculi as may be too large to extract.

Fig. 5—the Catheter Forceps, for emptying the bladder of detritus. The blades of this instrument are made hollow, like the screw forceps, to collect the detritus and small fragments, and allow of their passing off with the fluid; thus combining the uses of the Scoop and Catheter.

Note—The curved end of the fixed blade is completely open at the back, as represented in the engraving, fig. 1. This improvement was made at the suggestion of Mr. Oldham, of Dublin, to relieve the Instrument more readily of detritus than when only partially open, as it was first made

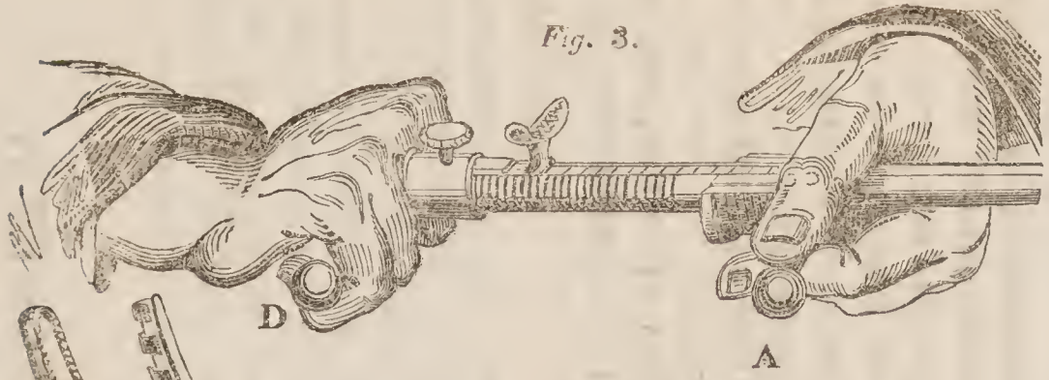


Fig. 3.

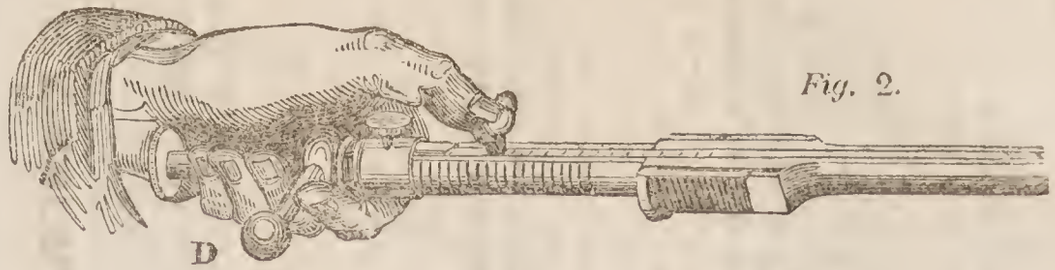


Fig. 2.

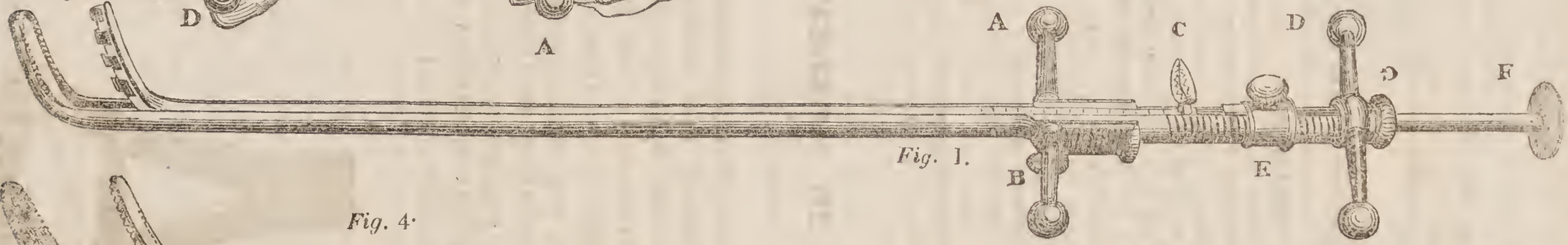


Fig. 1.

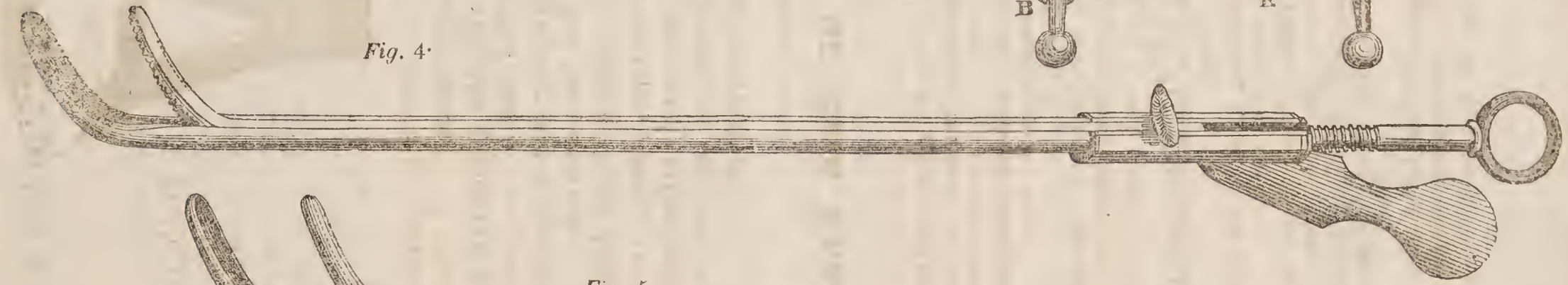


Fig. 4.

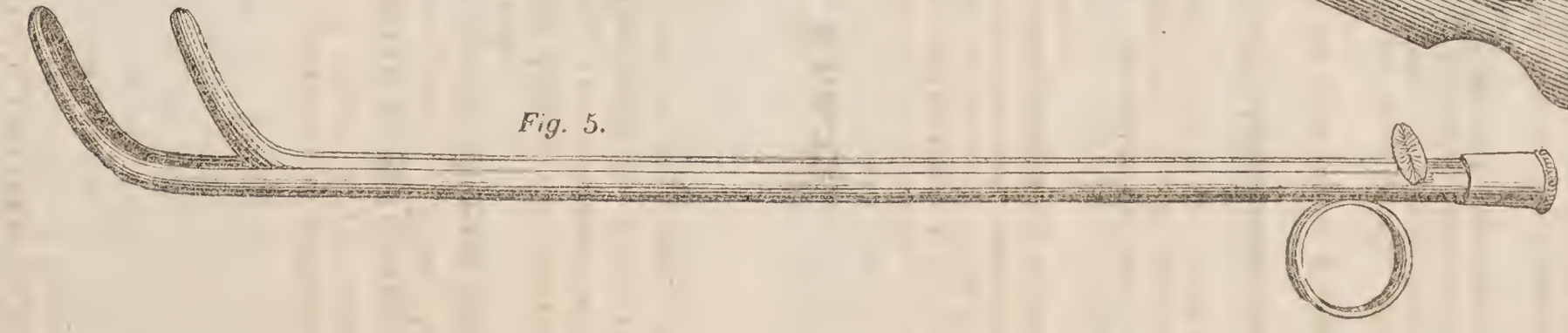


Fig. 5.

WEISS'S INSTRUMENTS.

THE well-known superiority of these Instruments has caused numerous attempts to be made to impose upon the Profession, by forging Weiss's name upon spurious Instruments, not only in England and Ireland, but in America; J. Weiss therefore takes the opportunity of cautioning the Profession against this fraud; informing them that no Instruments can be depended upon as being of his manufacture, unless purchased of him or his agents, whose names are mentioned below; and of whom may be had the following new Instruments:—

THE SPHYGMOMETER OF DR. HERISSON.

THE FRACTURE APPARATUS OF MESSRS. GREENHOW, M'INTYRE, AND GRANTHAM.

MR. SHEPHERD'S FORCEPS FOR THE EXTRACTION OF STUMPS, AND HIS SAFETY FORCEPS FOR WHOLE TEETH.

DR. GRAEFE'S ENCIRCLING LIGATURE APPARATUS.

———— COREONCION FOR ARTIFICIAL PUPIL.

———— KNIVES FOR EXTRACTION OF CATARACT.

———— STAPHYLORAPHIA APPARATUS; ALSO THOSE OF LEROUX, AND DIEFFENBACH, WITH METALLIC LIGATURE.

DESCHAMP'S PORTE CAUSTIQUE.

WEISS'S IMPROVED FOOTSTOOL FOR WARMING THE FEET AND AIRING CARRIAGES, BY MEANS OF A SMALL LAMP; which has been strongly recommended by SIR HENRY HALFORD, SIR BENJAMIN BRODIE, and other Professional Gentlemen.

THE FRENCH PATENT BOUTS DE SEINS AND BIBERONS, in every respect superior to the Teats and Shields now in use.

To these may be added the following Instruments which will shortly be completed.

THE VERY INGENIOUS REVOLVING BEDSTEAD FOR INVALIDS, BY DR. LEO WOLFF, OF NEW YORK.

THE OSTEOTOME OF DR. HEINE.

THE IMPROVED OSTEOTOME OF DR. THOMSON, AND CHARRIERE, OF PARIS.

Agents.

Messrs. FANNIN & CO., DUBLIN.
PUGH & PLEWS, EDINBURGH.
ELLISON, LIVERPOOL.
SIMPSON, MANCHESTER.
JOHNSON, BIRMINGHAM.
TOWNSEND, LEEDS.
GLENCROSS, DEVONPORT.
GILLETT, BRISTOL.
CASEY, CORK.
KELLY, LIMERICK.

Savill, Printer, *(late Harjette & Savill,)* 107, St. Martin's Lane.